TOSHIBA

# SERVICE MANUAL

## LCD Color Television

## 32A3030D Ver. 2.00

This model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).
For (*1) and (*2), refer to **GREEN PRODUCT PROCUREMENT** and **LEAD-FREE SOLDER**.

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# IMPORTANT NOTICE

**WARNING:**

**You are requested that you shall not modify or alter the information or data provided herein without prior written consent by Toshiba. Toshiba shall not be liable to anybody for any damages, losses, expenses or costs, if any, incurred in connection with or as a result of such modification or alteration.**

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**Toshiba shall not be liable for any damages, losses, expenses or costs, if any, incurred in connection with or as a result of use of any information or data provided herein.**

# GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

# LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

**WARNING: This product is manufactured using lead free solder.**
**DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT!**

The melting temperature of lead-free solder is higher than that of leaded solder by 86ºF to 104ºF (30ºC to 40ºC). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product especially when soldering large components, through-hole pins, and on PCBs as the level of heat required to melt lead-free solder is high.

# SAFETY INSTRUCTION

**WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.**

## Safety Precaution

**WARNING: SERVICING SHOULD NOT BE ATTEMPTED BY ANYONE UNFAMILIAR WITH THE NECESSARY PRECAUTIONS ON THIS RECEIVER. THE FOLLOWING ARE THE NECESSARY PRECAUTIONS TO BE OBSERVED BEFORE SERVICING THIS CHASSIS.**

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.

2. Always disconnect the power plug before any disassembling of the product. It may result in electrical shock.

3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network, etc.

4. Always keep tools, components of the product, etc away from the children, These items may cause injury to children.

5. Depending on the model, use an isolation transformer or wear suitable gloves when servicing with the power on, and disconnect the power plug to avoid electrical shock when replacing parts. In some cases, alternating current is also impressed in the chassis, so electrical shock is possible if the chassis is contacted with the power on.

6. Always use the replacement parts specified for the particular model when making repairs. The parts used in products require special safety characteristics such as

inflammability, voltage resistance, etc. therefore, use only replacement parts that have these same characteristics. Use only the specified parts when the ⚠ mark is indicated in the circuit diagram or parts list.

7. Parts mounting and routing dressing of wirings should be the same as that used originally. For safety purposes, insulating materials such as isolation tube or tape are sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wirings is routed and clamped to avoid parts that generate heat and which use high voltage. Always follow the manufactured wiring routes / dressings.

8. Always ensure that all internal wirings are in accordance before re-assembling the external casing after a repairing completed. Do not allow internal wiring to be pinched by cabinets, panels, etc. Any error in reassembly or wiring can result in electrical leakage, flame, etc., and may be hazardous.

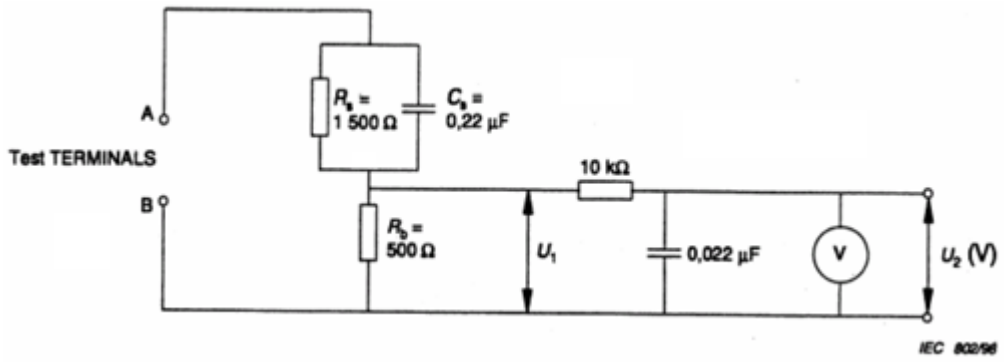
9. NEVER remodel the product in any way. Remodeling can result in improper operation, malfunction, or electrical leakage and flame, which may be hazardous.

10. Touch current check. (After completing the work, measure touch current to prevent an electric shock.)

    - Plug the AC cord directly into the AC outlet. Do NOT use an isolation transformer for this check.
    - Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe.

Annex D
(normative)

Measuring network for TOUCH CURRENTS




Resistance values in orms (Ω).

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance : $\geqq$ 1 MΩ
Input capacitance : $\leqq$ 200 pF
Frequency range : 15 Hz to 1 MHz and d.c. respectively

**Note:** Appropriate measures should be taken to obtain the correct value in case of non sinusoidal waveforms.

The measuring instrument is calibrated by comparing the frequency factor of $U_2$ with the solid line in figure F.2 of IEC 60990 at various frequencies. A calibration curve is constructed showing the deviation of $U_2$ from the ideal curve as a function of frequency.

TOUCH CURRENT = $U_2$/500 (peak value).

- The potential at any point (TOUCH CURRENT) expressed as voltage $U_1$ and $U_2$ does not exceed the following value:

The part or contact of a TERMINAL is not HAZARDOUS LIVE if:

a) The open-circuit voltage should not exceed 35 V (peak) a.c. or 60 V d.c. or, if a) is not met.
b) The measurement of the TOUCH CURRENT shall be carried out in accordance with IEC 60990, with the measuring network described in **Annex D** of this standard.

The TOUCH CURRENT expressed as voltages $U_1$ and $U_2$, does not exceed the following values:
- for a.c. : $U_1$ = 35 V (peak) and $U_2$ = 0.35 V (peak);
- for d.c. : $U_1$ = 1.0 V

**Note:** The limit values of $U_2$ = 0.35 V (peak) for a.c. and $U_1$ = 1.0 V for d.c. correspond to the values 0.7 mA (peak) a.c. and 2.0 mA d.c.

## Product Safety Notice

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create electrical shock, fire, or other hazards.

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Annex D
(normative)

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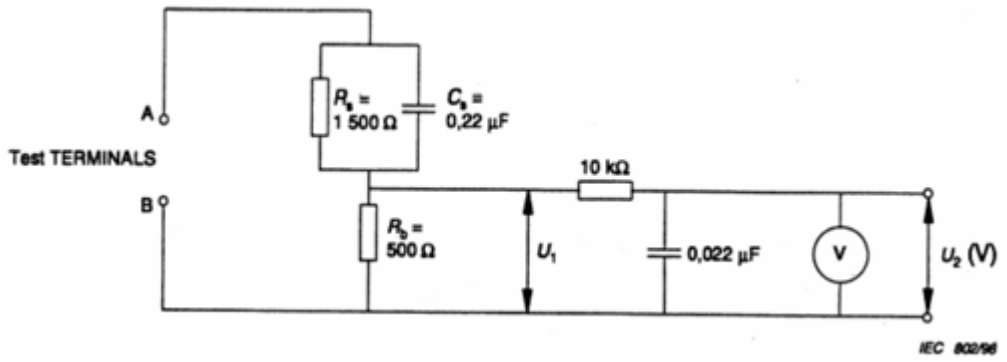


Resistance values in orms (Ω).

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Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create electrical shock, fire, or other hazards.

# SAFETY INSTRUCTION

## Handling the LCD Module

### Safety Precaution

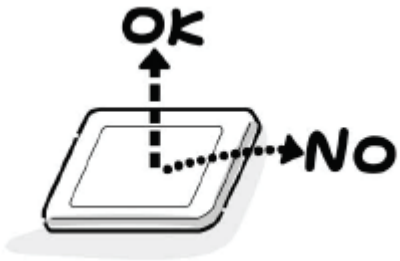
In the event that the screen is damaged or the liquid crystal (fluid) leaks, do not breathe in or drink this fluid.
Also, never touch this fluid. Such actions could cause toxicity or skin irritation. If this fluid should enter the mouth, rinse the mouth thoroughly with water. If the fluid should contact the skin or clothing, wipe off with alcohol, etc., and rinse thoroughly with water. If the fluid should enter the eyes, immediately rinse the eyes thoroughly with running water.

### Precautions for Handling the LCD Module

**CAUTION: The metal edges of the LCD module are sharp, handle it with care.**

The LCD module can easily be damaged during disassembly or reassembly; therefore, always observe the following precautions when handling the module.

1. When attaching the LCD module to the LCD cover, position it appropriately and fasten at the position where the display can be viewed most conveniently.



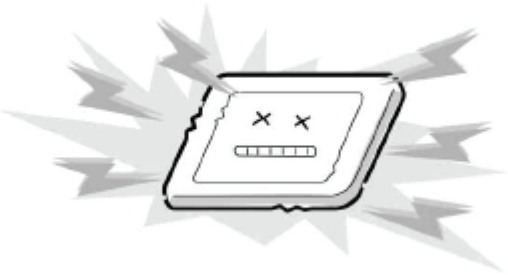

2. Carefully align the holes at all four corners of the LCD module with the corresponding holes in the LCD cover and fasten with screws. Do not strongly push on the module because any impact can adversely affect the performance. Also use caution when handling the polarized screen because it can easily be damaged.

3. If the panel surface becomes soiled, wipe with cotton or a soft cloth. If this does not remove the soiling, breathe on the surface and then wipe again.
   If the panel surface is extremely solied, use a CRT cleaner as a cleaner. Wipe off the panel surface by drop the cleaner on the cloth. Do not drop the cleaner on the panel. Pay attention not to scratch the panel surface.

4. Leaving water or other fluids on the panel screen for an extended period of time can result in discoloration or stripes. Immediately remove any type of fluid from the screen.

5. Glass is used in the panel, so do not drop or strike with hard objects. Such actions can damage the panel.

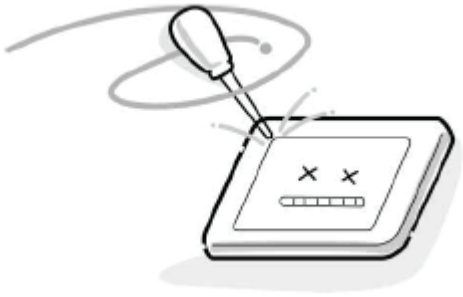
6. CMOS-LSI circuitry is used in the LCD module, so avoid damage due to static electricity. When handling the module, use a wrist ground or anchor ground.



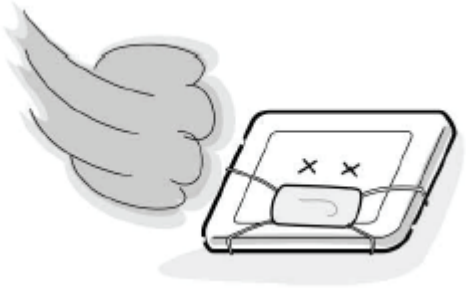
7. Do not expose the LCD module to direct sunlight or strong ultraviolet rays for an extended period of time.

8. Do not store the LCD module below the temperature conditions described in the specifications. Failure to do so could result in freezing of the liquid crystal due to cold air or loss of resilience or other damage.

9. Do not disassemble the LCD module. Such actions could result in improper operation.



10. When transporting the LCD module, do not use packing containing epoxy resin (amine) or silicon resin (alcohol or oxim). The gas generated by these materials can cause loss of polarity.



U03B
Key

U02A
LOW-B

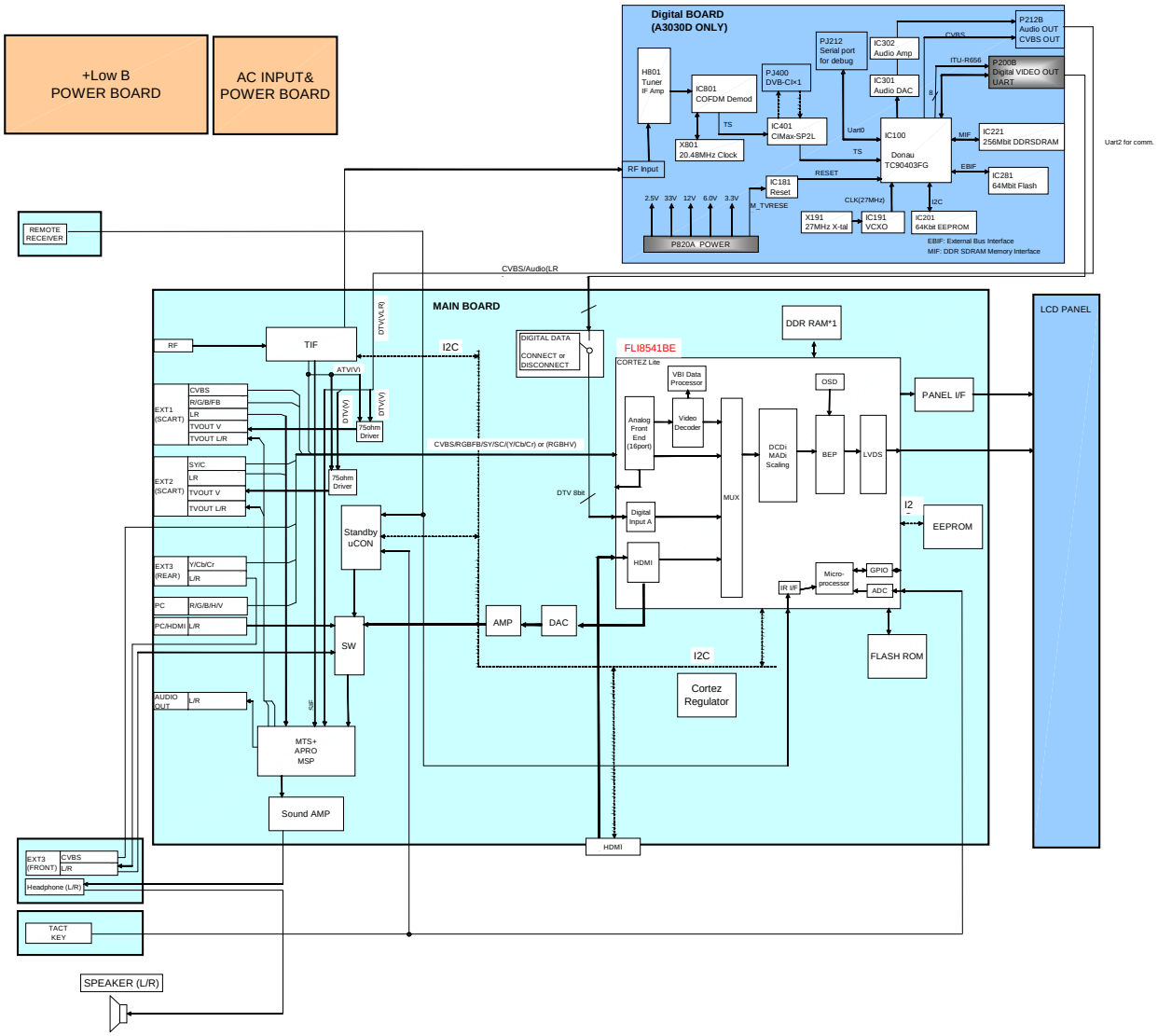
U01A
POWER

U03A
Front-AV

U04A
Main

U05A
Digital

U03C
LED


+Low B
POWER BOARD
AC INPUT&
POWER BOARD
Digital BOARD
(A3030D ONLY)
H801
Tuner
IF Amp
IC801
COFDM Demod
PJ400
DVB-CI×1
PJ212
Serial port
for debug
IC302
Audio Amp
IC301
Audio DAC
P212B
Audio OUT
CVBS OUT
P200B
Digital VIDEO OUT
UART
ITU-R656
CVBS
X801
20.48MHz Clock
TS
IC401
CIMax-SP2L
Uart0
IC100
Donau
TC90403FG
MIF
IC221
256Mbit DDRSDRAM
RF Input
RESET
EBIF
IC281
64Mbit Flash
IC181
Reset
2.5V
3.3V
12V
6.0V
M_TVRESE
CLK(27MHz)
I2C
X191
27MHz X-tal
IC191
VCXO
IC201
64Kbit EEPROM
P820A POWER
EBIF: External Bus Interface
MIF: DDR SDRAM Memory Interface
Uart2 for comm.
REMOTE
RECEIVER
CVBS/Audio/LR
MAIN BOARD
RF
TIF
DTV(VLR)
I2C
DIGITAL DATA
CONNECT or
DISCONNECT
FLI8541BE
CORTEZ Lite
DDR RAM*1
LCD PANEL
ATV(V)
EXT1
(SCART)
CVBS
R/G/B/FB
L/R
TVOUT V
TVOUT L/R
DTV(V)
75ohm
Driver
CVBS/RGBFB/SY/SC/(Y/Cb/Cr) or (RGBHV)
EXT2
(SCART)
SY/C
VBI Data
Processor
OSD
Analog
Front
End
(16port)
Video
Decoder
DCDi
MADi
Scaling
BEP
LVDS
PANEL I/F
DTV 8bit
Digital
Input A
MUX
I2
EEPROM
Standby
uCON
HDMI
EXT3
(REAR)
Y/Cb/Cr
L/R
PC
R/G/B/H/V
PC/HDMI
L/R
Micro-
processor
GPIO
ADC
IR I/F
AMP
DAC
SW
FLASH ROM
I2C
Cortez
Regulator
AUDIO
OUT
L/R
SIF
MTS+
APRO
MSP
Sound AMP
HDMI
EXT3
(FRONT)
CVBS
L/R
Headphone (L/R)
TACT
KEY
SPEAKER (L/R)

# SCHEMATIC DIAGRAM

## Precaution

**WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" FOR DIRECT VIEW CTV ONLY, "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" OF THIS MANUAL.**

**CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.**

**The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the SAFETY PRECAUTION and PRODUCT SAFETY NOTICE.**

**Do not degrade the safety of the receiver through improper servicing.**

**Note:**

1. RESISTOR
   Resistance is shown in ohm [K=1,000, M=1,000,000]. All resistors are 1/6 W and 5 % tolerance carbon resistor, unless otherwise noted as the following marks.

   1/2R : Metal or Metal oxide of 1/2 watt
   1/2S : Carbon composition of 1/2 watt
   1RF : Fuse resistor of 1 watt
   10 W : Cement of 10 watt
   K : ±10 %
   G : ±2 %
   F : ±1 %

2. CAPACITOR
   Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in µF, and the values more than 1 in pF.
   All capacitors are ceramic 50 V, unless otherwise noted as the following marks.

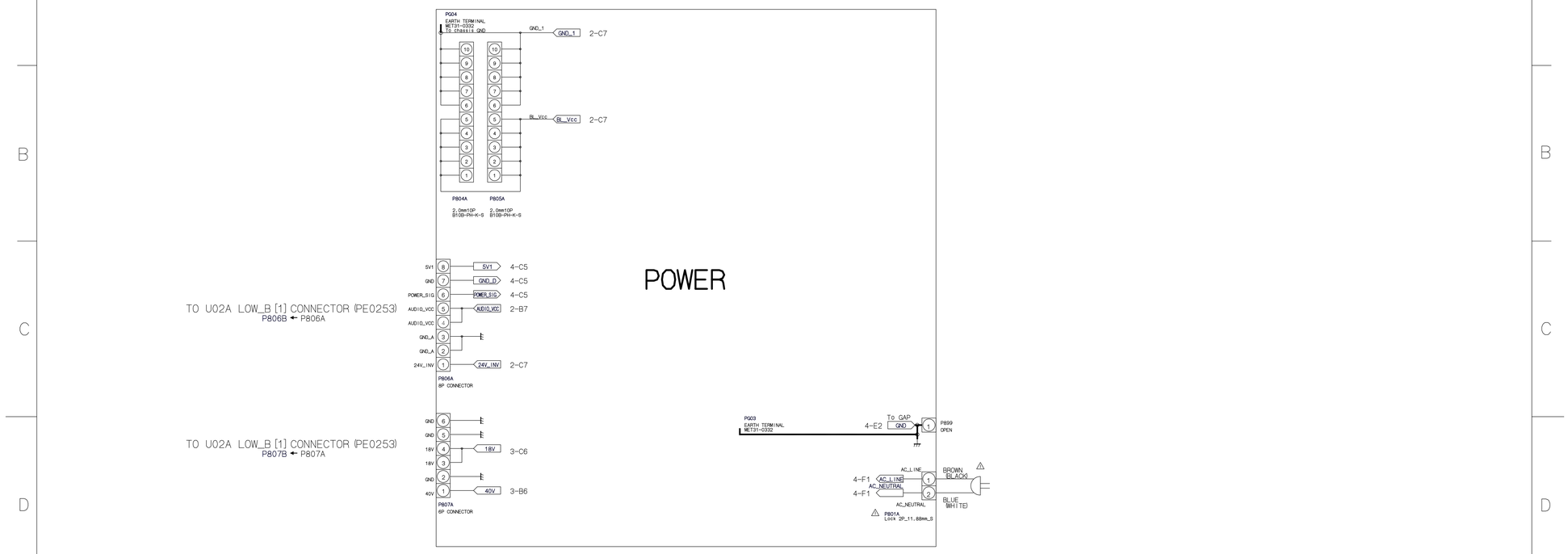
= Electrolytic capacitor
= Mylar capacitor

3. The parts indicated with "⚠" have special characteristics, and should be replaced with identical parts only.

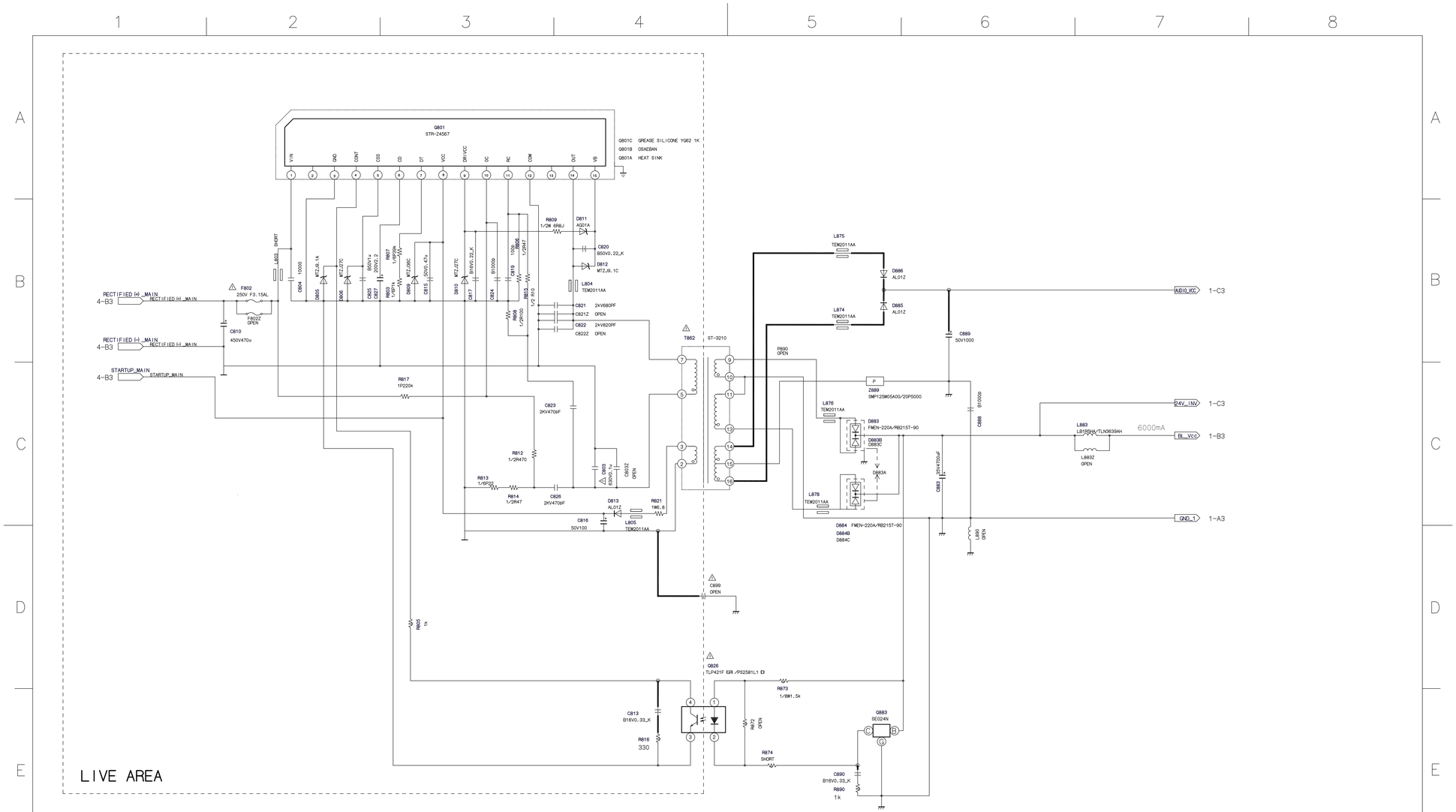
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassis ground, using a color bar signal with all controls at normal, line voltage at nominal AC volts.

5. Waveforms are taken receiving color bar signal with enough sensitivity.

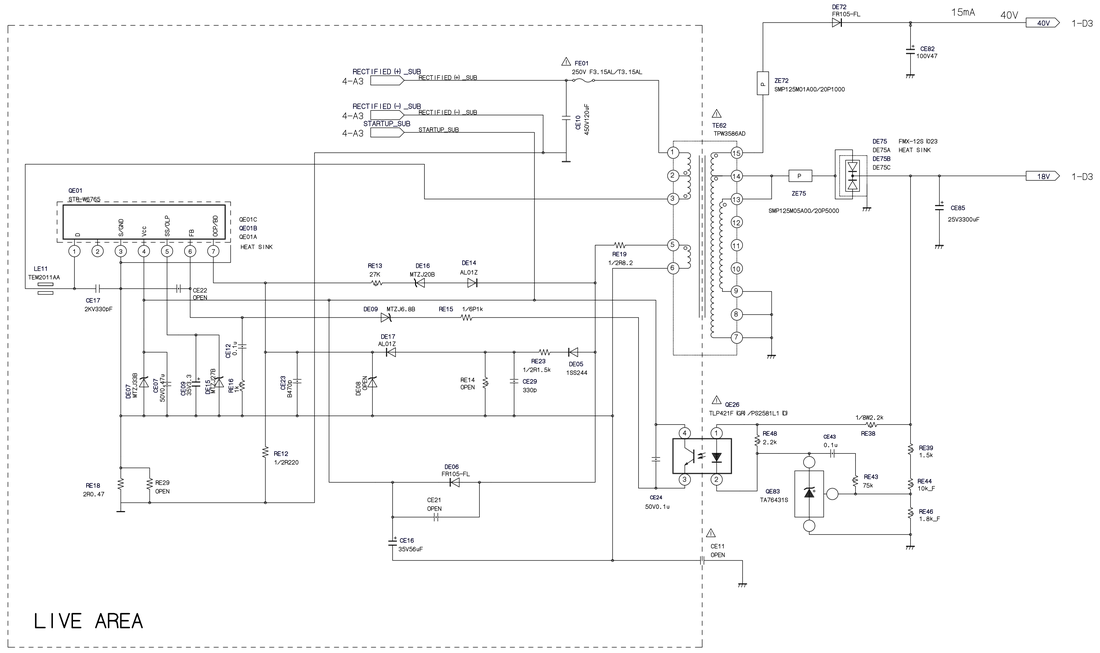
6. Voltage reading shown are nominal values and may vary ±20 % except H.V.



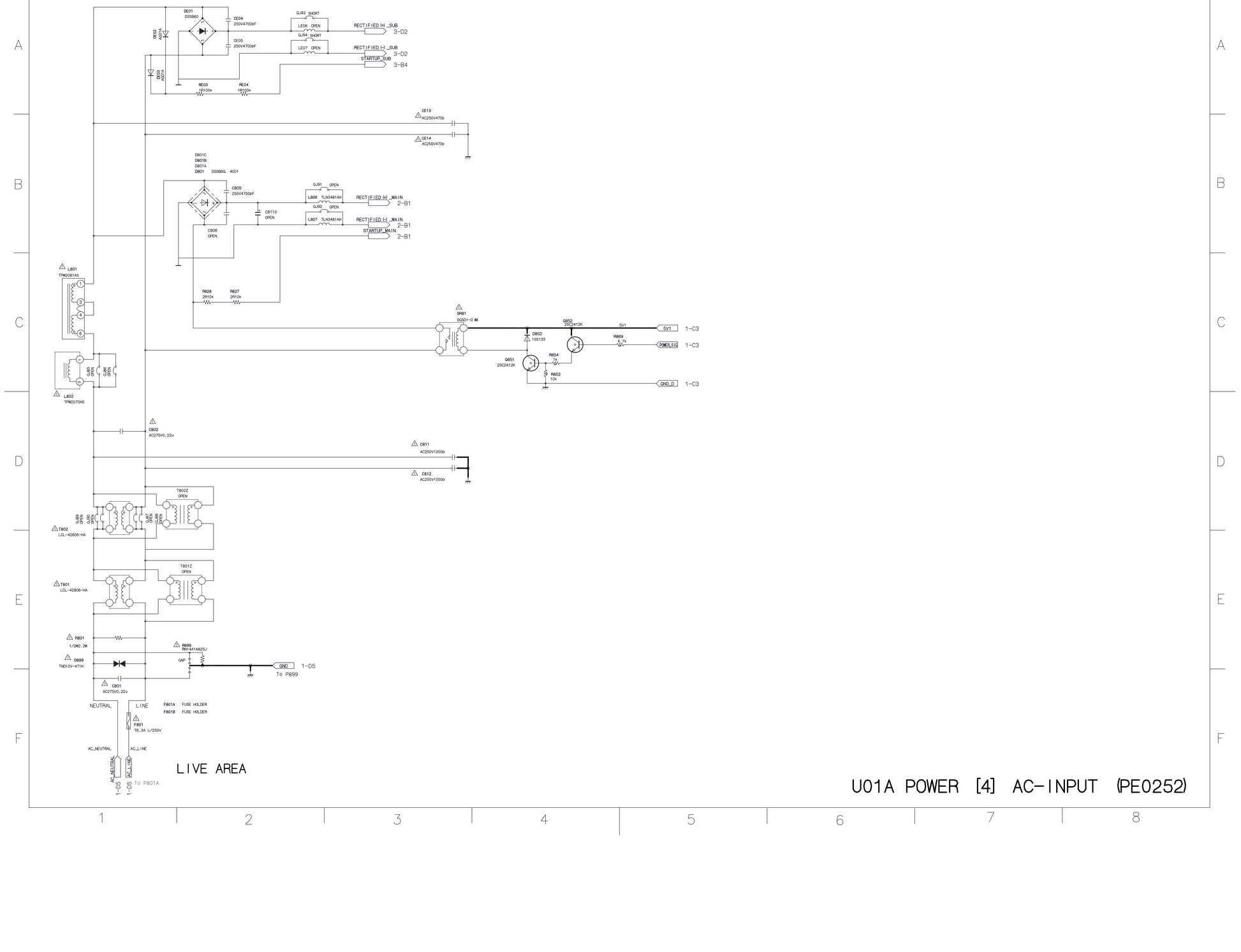

U01A POWER [1] CONNECTOR (PE0252)



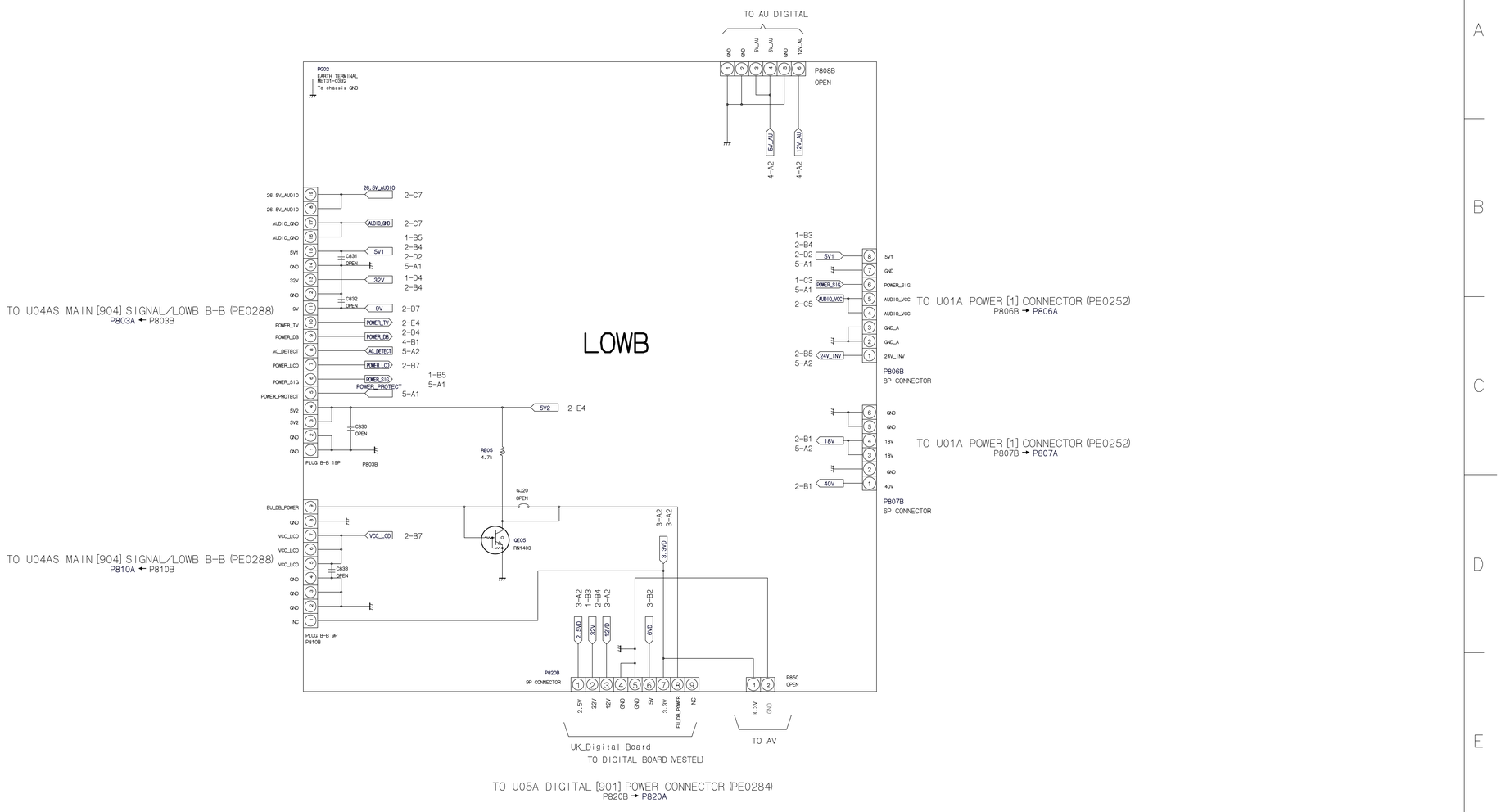

U01A POWER [2] MAIN_POWER (PE0252)



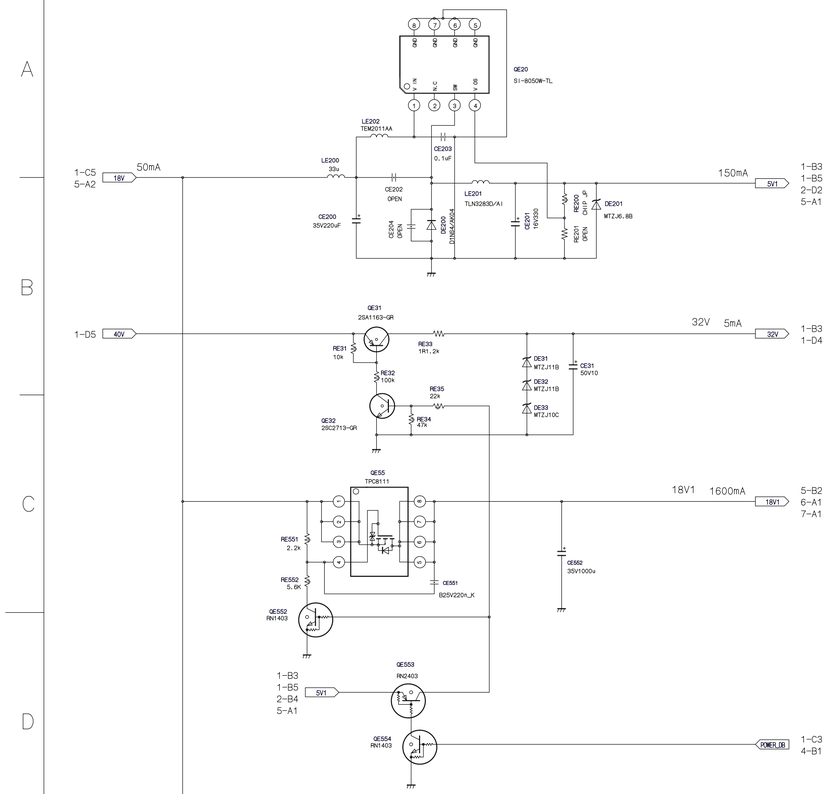

U01A POWER [3] SUB_POWER (PE0252)

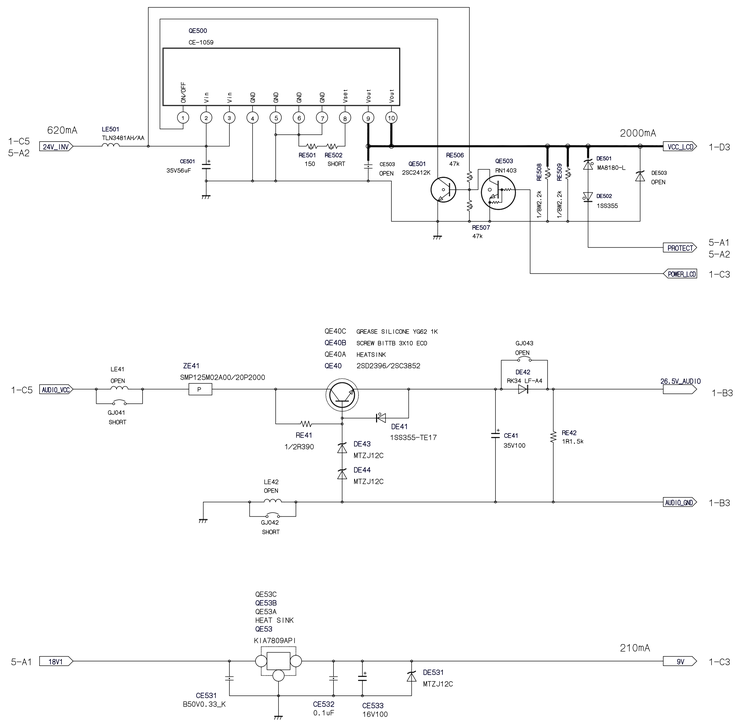



U01A POWER [4] AC-INPUT (PE0252)

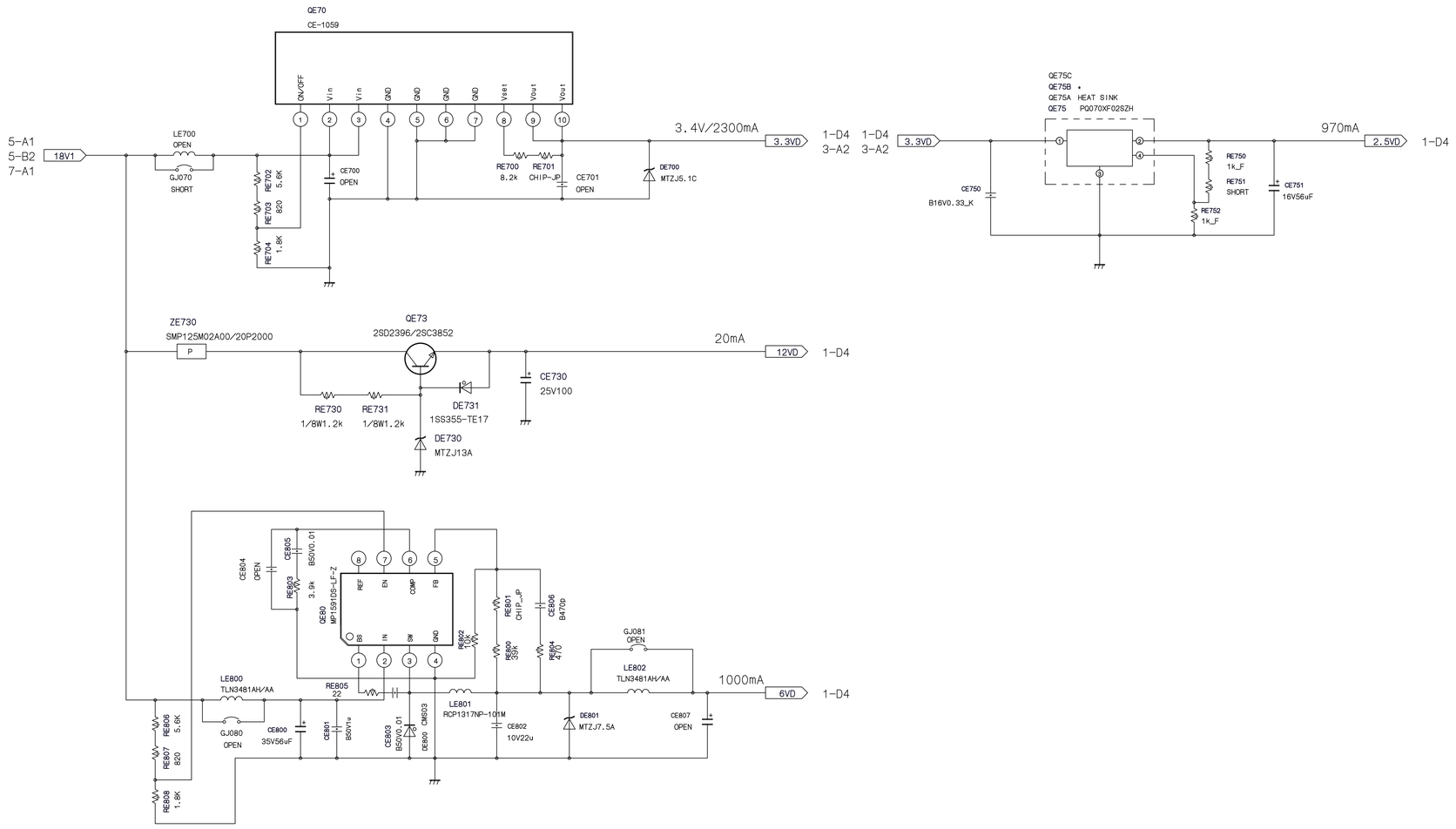



# U02A LOW_B [1] CONNECTOR (PE0253)

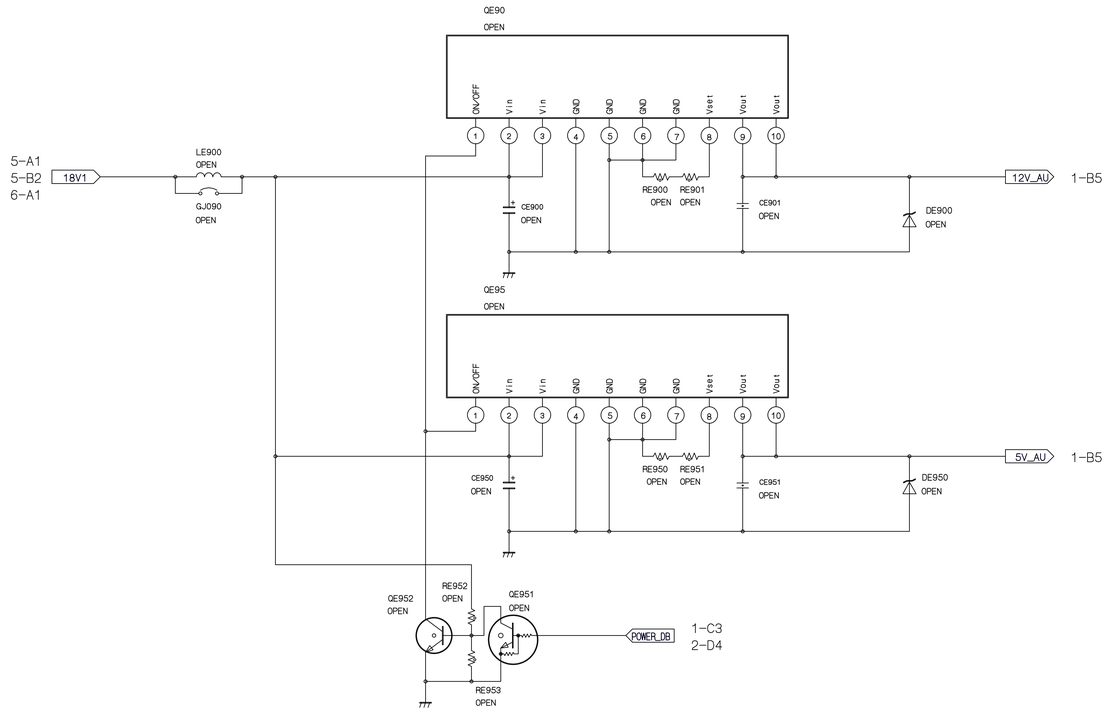



# U02A LOW_B [2] REGULATOR (PE0253)

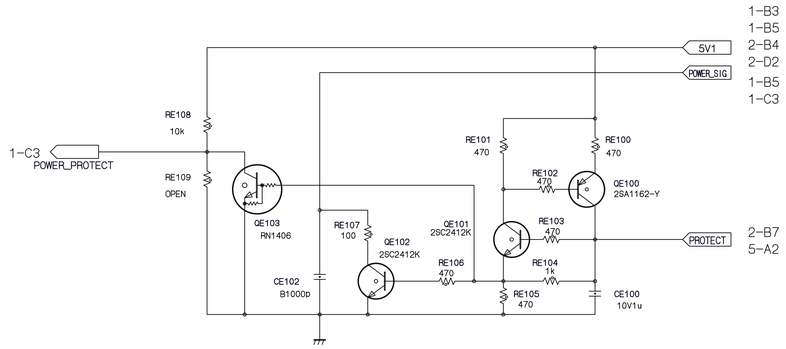



# U02A LOW_B [3] for UK DIGITAL (PE0253)

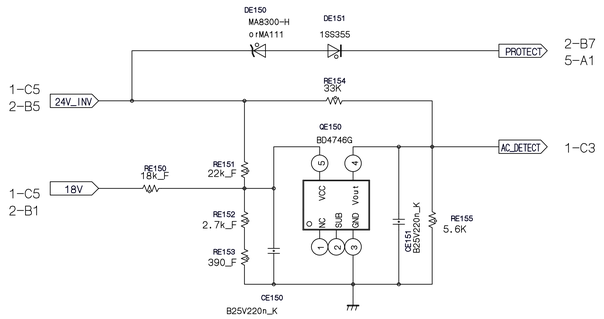



U02A LOW_B [4] for AU_DIGITAL (PE0253)

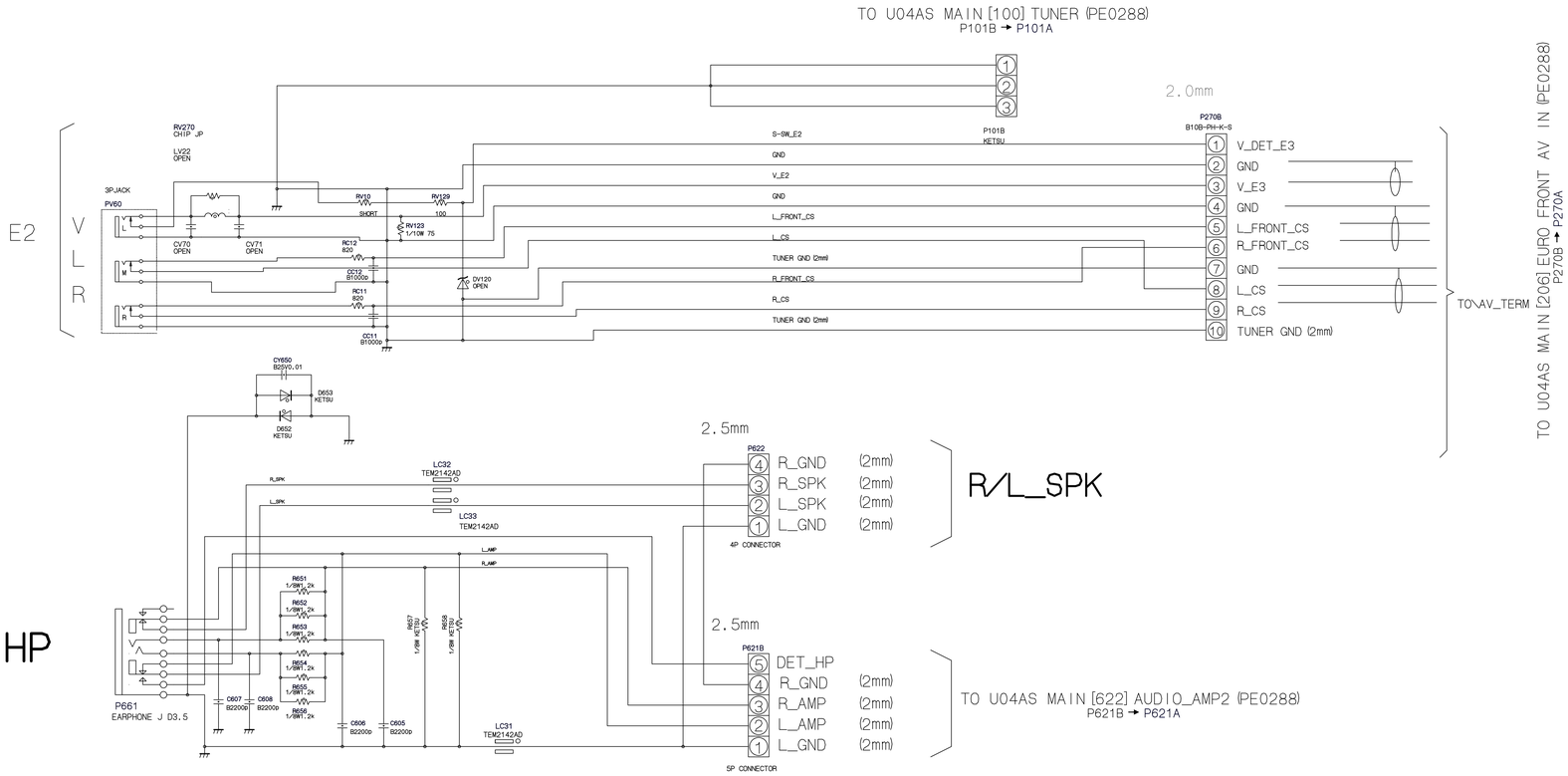
## PROTECTER




## ACDETECT

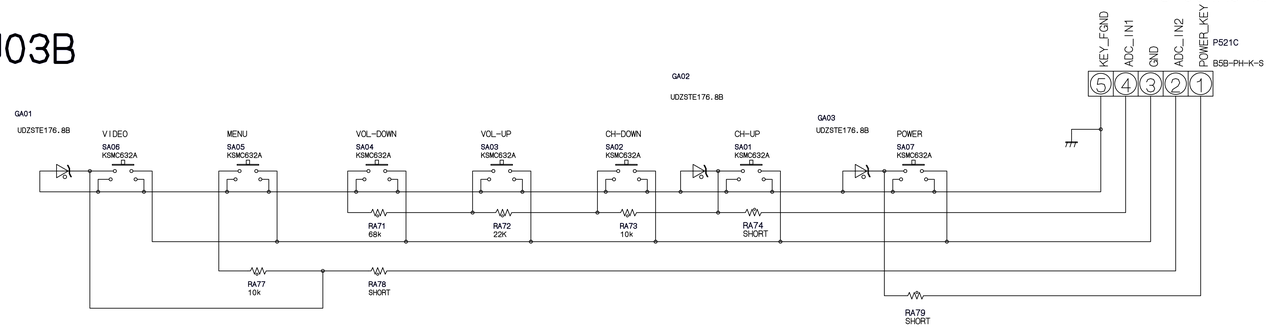



U02A LOW_B [5] OTHER (PE0253)

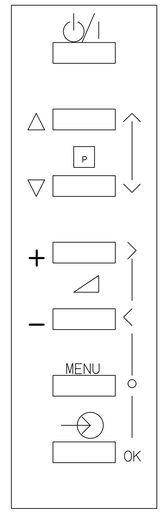



# U03A FRONT_AV [1] FRONT-AV (PE0287)

# U03B

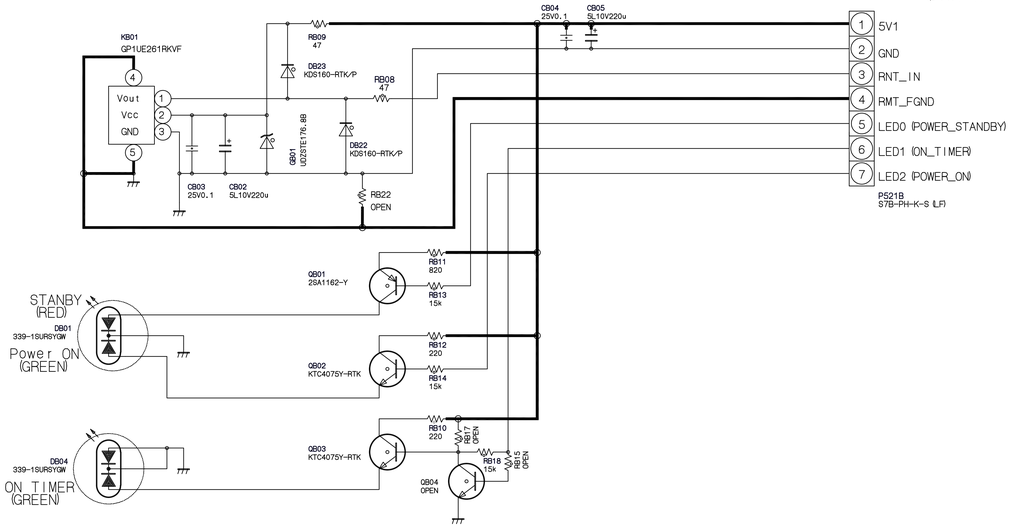


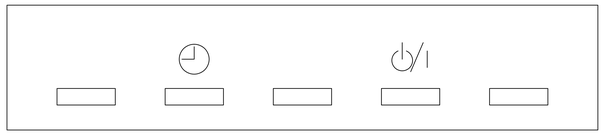

TO U04AS MAIN [502] SUB MICRO-3 (PE0288)
P521C → P521A (pin8-12)



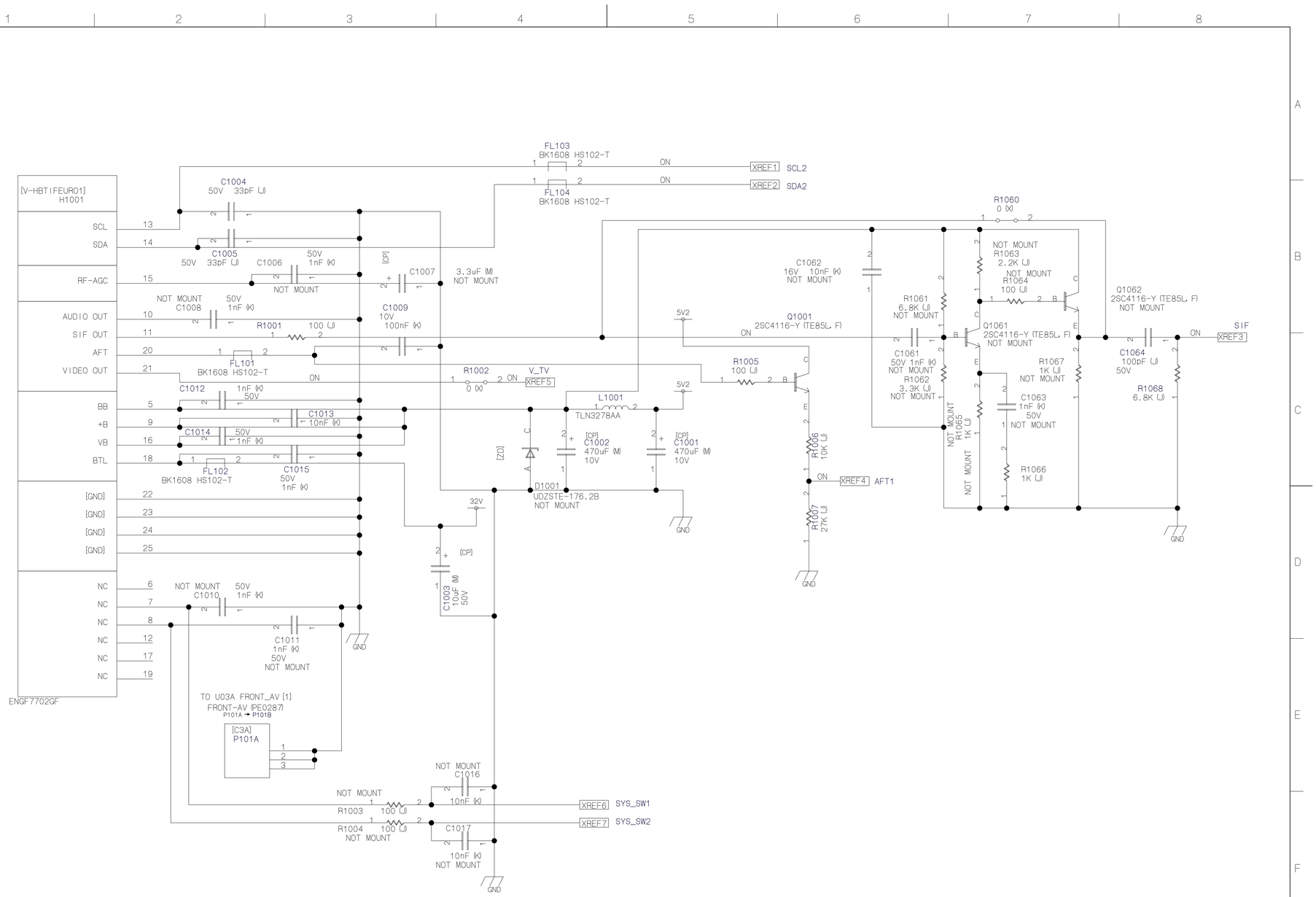

# U03C

TO U04AS MAIN [502] SUB MICRO-3 (PE0288)
P521B → P521A (pin1-7)




U03B/C KEY_LED [1] KEY & LED (PE0287)




U04AS MAIN [100] TUNER (PE0288)

FL201、FL202、FL203　(PC入力)
EMC対策のためビーズに変更

[V-U8541]
1/7
IC700

A1P
A2P
A3P
A4P
AN
B1P
B2P
B3P
B4P
BN
C1P
C2P
C3P
C4P
CN
SV1P
SVN
VOUT2
AIP_RAW_HS
AIP_RAW_VS

XREF1 RED_Cr_EF
YV_E2
XREF3 RED_E1
XREF4 V_TV
XREF5 GREEN_Y_EF
XREF6 SC_E2
XREF7 GREEN_E1
DTV_EF
XREF9 BLUE_Cb_EF
XREF10 SCART_FB_SIG
XREF11 BLUE_E1
XREF12 V_EF_E3
XREF13 V_E1
XREF14 V_OUT
XREF15 HS_PC
XREF16 VS_PC

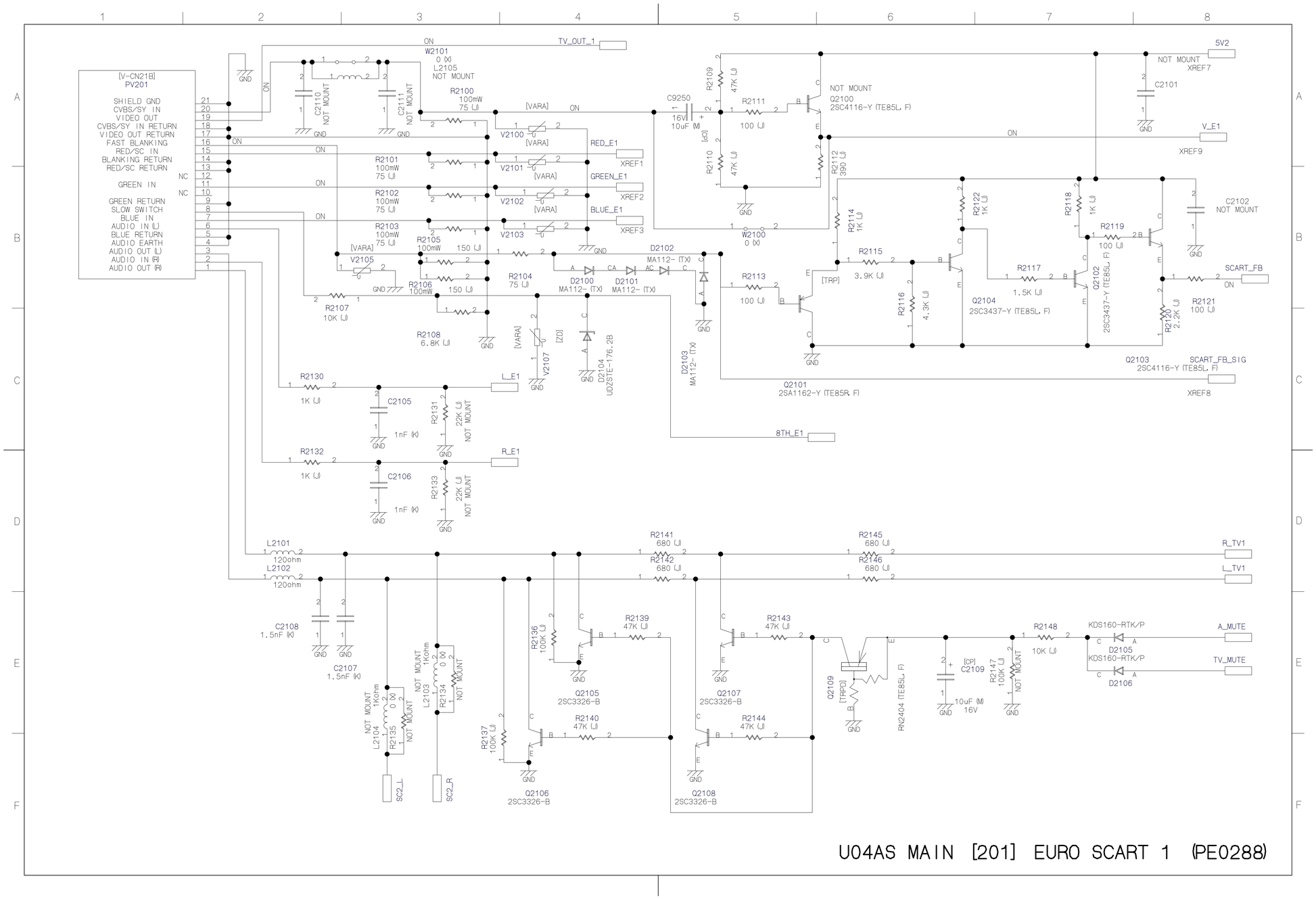
ON
NOT MOUNT
0 (X)

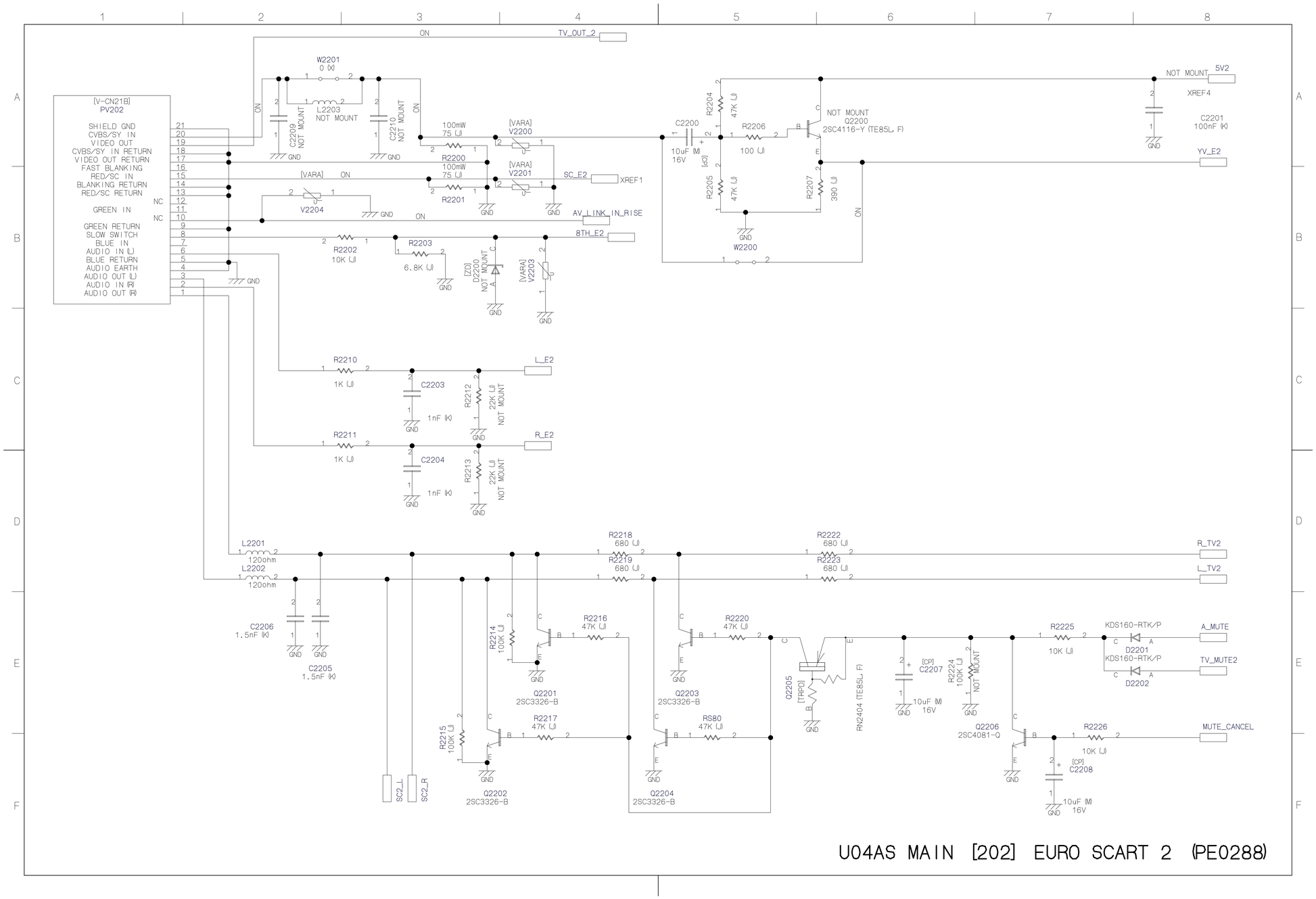
FL201 FL202 FL203
C2001 C2002 C2003 C2004 C2005 C2006 C2007 C2008 C2009 C2010 C2011 C2012 C2013 C2014 C2015 C2016 C2017
100nF (K)
R2002 R2003 R2004 R2005 R2007 R2008 R2009 R2010 R2012 R2013 R2014 R2015 R2016 R2017
56 (J)
W2005 W2006 W2010 W2011 W2015 W2016 W2017 W2018 W2019
R2018 4.7K (J)
R2019 R2020 33 (J)

D2001 D2002 D2003 D2004 D2005 D2006 D2007 D2008 [0Z]
[ZD] D2009 D2010 D2011 D2012 D2013
[VARA] V2014 V2015

D_GND
GND

スプリアス対策のため
ネガティブフィードバック端子を
GND接続をOR対応とする。

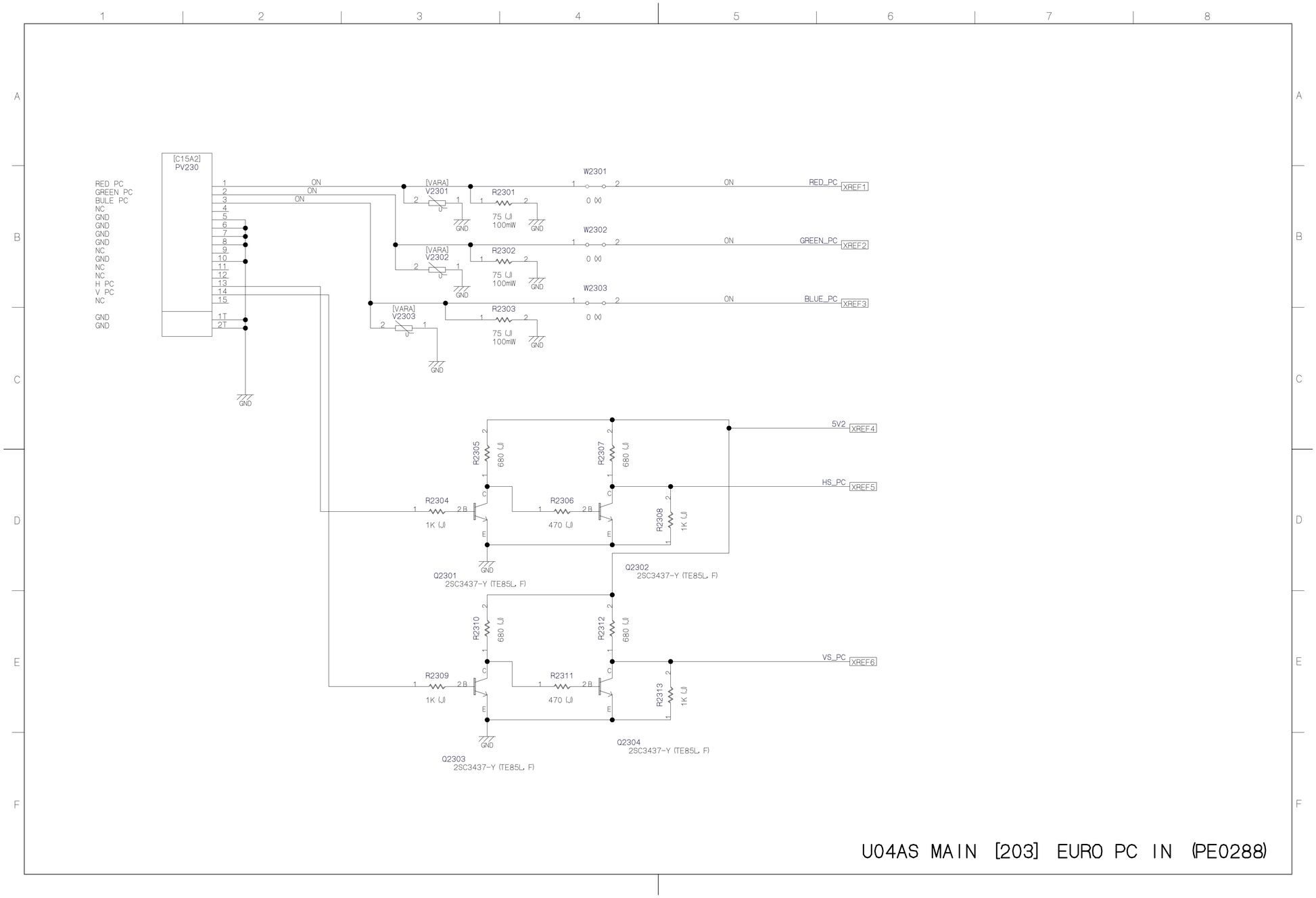

[V-CN21B]
PV201
SHIELD GND
CVBS/SY IN
VIDEO OUT
CVBS/SY IN RETURN
VIDEO OUT RETURN
FAST BLANKING
RED/SC IN
BLANKING RETURN
RED/SC RETURN
NC
GREEN IN
NC
GREEN RETURN
SLOW SWITCH
BLUE IN
AUDIO IN (L)
BLUE RETURN
AUDIO EARTH
AUDIO OUT (L)
AUDIO IN (R)
AUDIO OUT (R)
TV_OUT_1
W2101
0 (X)
L_2105
NOT MOUNT
C2110
NOT MOUNT
C2111
NOT MOUNT
R2100
100mW
75 (J)
V2100
[VARA]
RED_E1
XREF1
R2101
100mW
75 (J)
V2101
[VARA]
GREEN_E1
XREF2
R2102
100mW
75 (J)
V2102
[VARA]
BLUE_E1
XREF3
R2103
100mW
75 (J)
V2103
R2105
100mW
150 (J)
V2105
[VARA]
R2106
100mW
150 (J)
R2107
10K (J)
R2104
75 (J)
D2100
MA112-(TX)
D2101
MA112-(TX)
D2102
MA112-(TX)
R2108
6.8K (J)
V2107
[VARA]
[ZD]
D2104
UDZSTE-176.2B
D2103
MA112-(TX)
C9250
16V
10uF (M)
[CP]
R2109
47K (J)
R2110
47K (J)
R2111
100 (J)
Q2100
2SC4116-Y (TE85L, F)
NOT MOUNT
W2100
0 (X)
R2112
390 (J)
R2114
1K (J)
R2115
3.9K (J)
[TRP]
R2113
100 (J)
R2116
4.3K (J)
R2122
1K (J)
Q2104
2SC3437-Y (TE85L, F)
R2117
1.5K (J)
R2118
1K (J)
R2119
100 (J)
Q2102
2SC3437-Y (TE85L, F)
C2102
NOT MOUNT
R2120
2.2K (J)
R2121
100 (J)
SCART_FB
Q2103
2SC4116-Y (TE85L, F)
SCART_FB_SIG
XREF8
Q2101
2SA1162-Y (TE85R, F)
5V2
NOT MOUNT
XREF7
C2101
V_E1
XREF9
L_E1
R2130
1K (J)
C2105
1nF (K)
R2131
22K (J)
NOT MOUNT
8TH_E1
R_E1
R2132
1K (J)
C2106
1nF (K)
R2133
22K (J)
NOT MOUNT
L2101
120ohm
L2102
120ohm
C2108
1.5nF (K)
C2107
1.5nF (K)
NOT MOUNT
1Kohm
L2104
R2135
0 (X)
NOT MOUNT
NOT MOUNT
1Kohm
L2103
0 (X)
R2134
NOT MOUNT
SC2_L
SC2_R
R2136
100K (J)
R2137
100K (J)
Q2106
2SC3326-B
R2139
47K (J)
R2140
47K (J)
Q2105
2SC3326-B
R2141
680 (J)
R2142
680 (J)
R2143
47K (J)
R2144
47K (J)
Q2107
2SC3326-B
Q2108
2SC3326-B
R2145
680 (J)
R2146
680 (J)
R_TV1
L_TV1
Q2109
[TRPD]
RN2404 (TE85L, F)
[CP]
C2109
10uF (M)
16V
R2147
100K (J)
NOT MOUNT
R2148
10K (J)
KDS160-RTK/P
D2105
KDS160-RTK/P
D2106
A_MUTE
TV_MUTE
U04AS MAIN [201] EURO SCART 1 (PE0288)



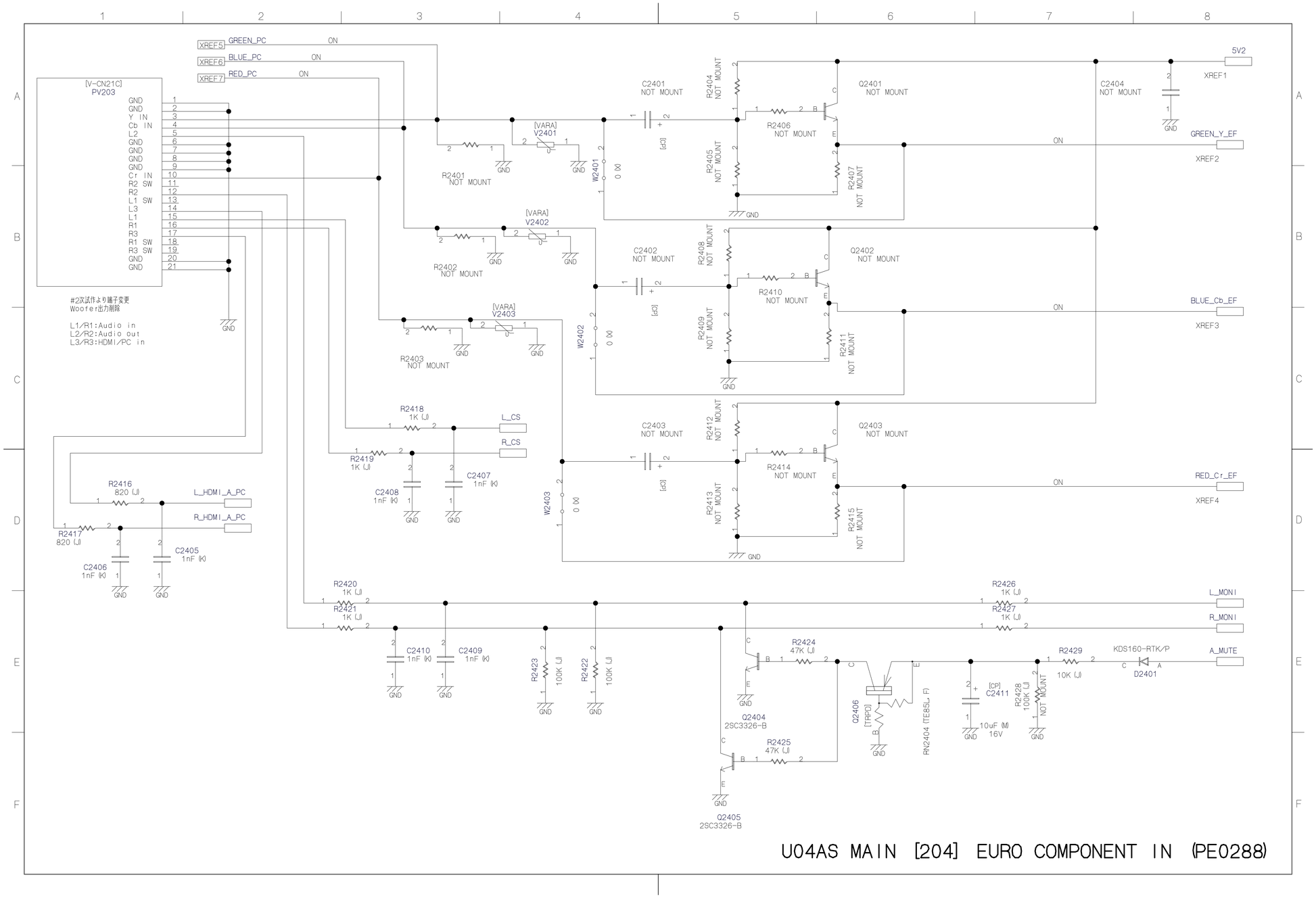




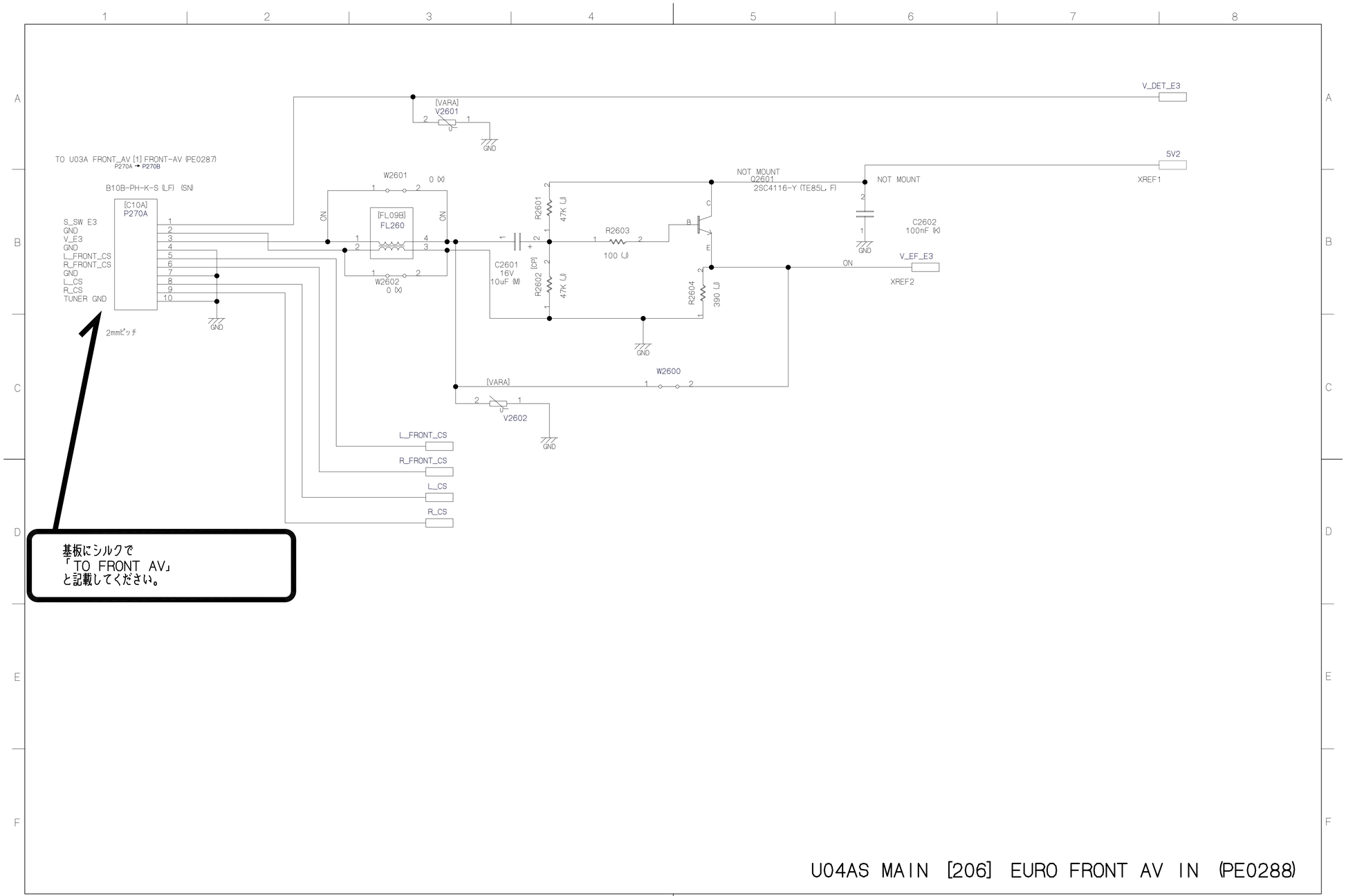
# U04AS MAIN [202] EURO SCART 2 (PE0288)

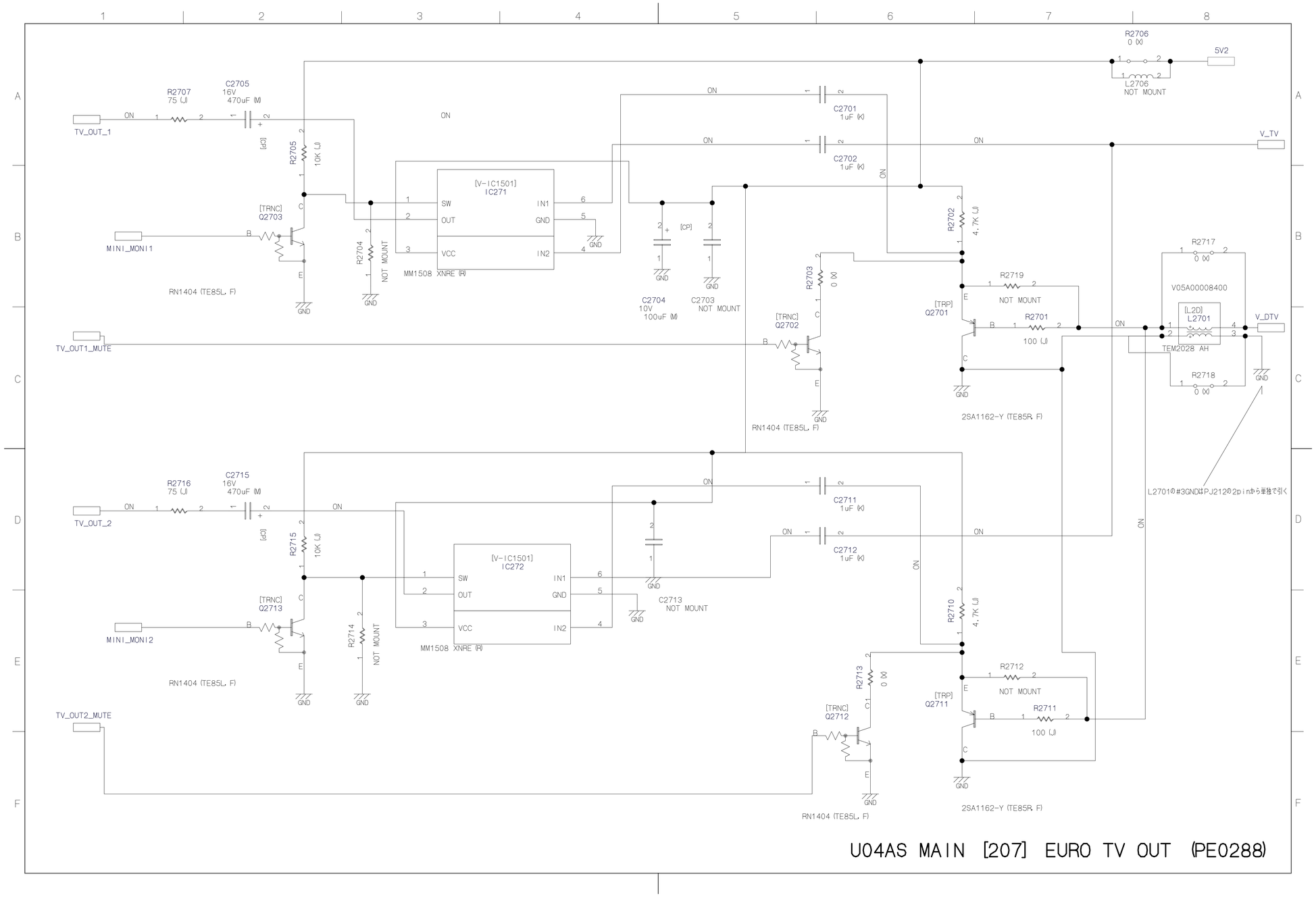


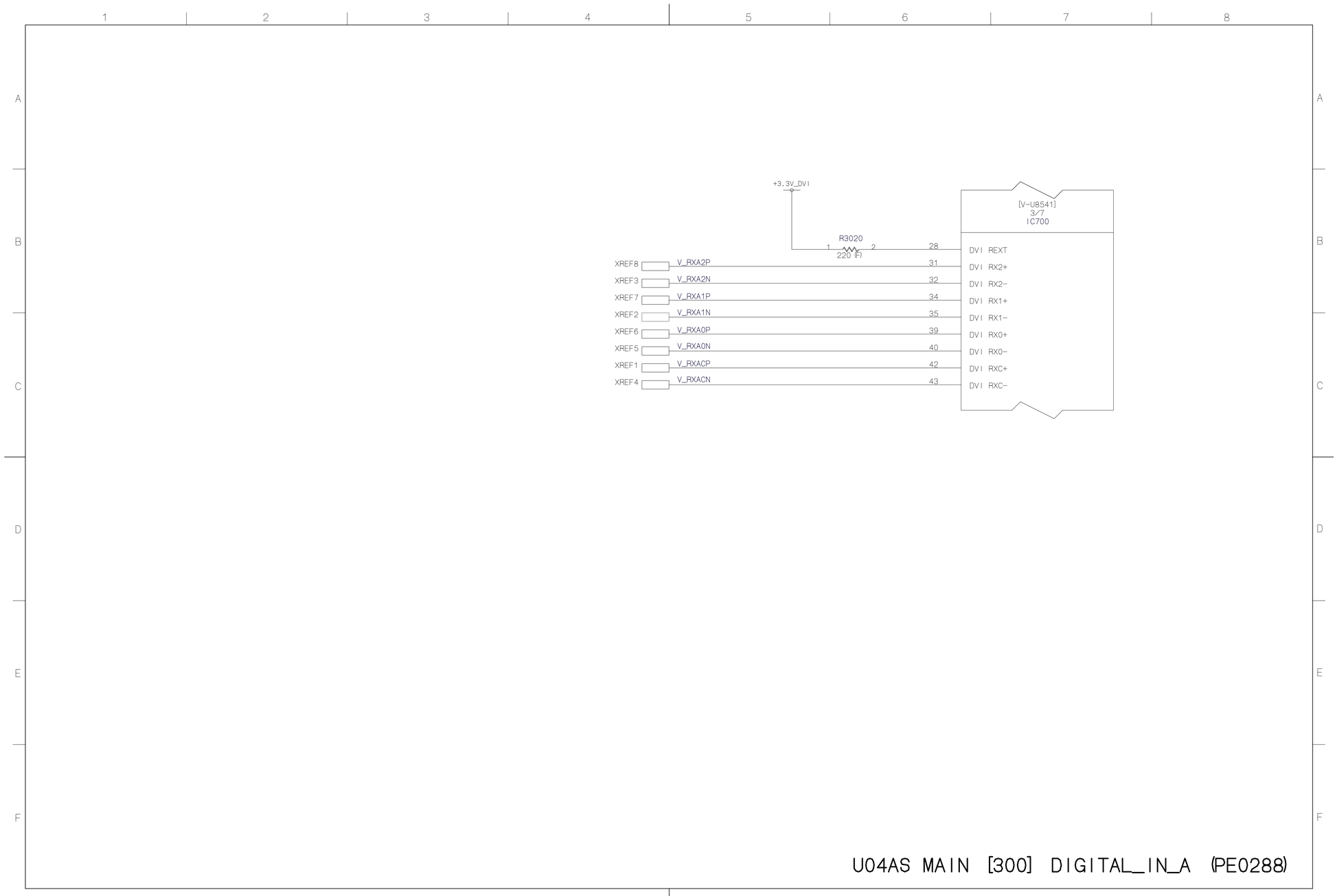

U04AS MAIN [203] EURO PC IN (PE0288)

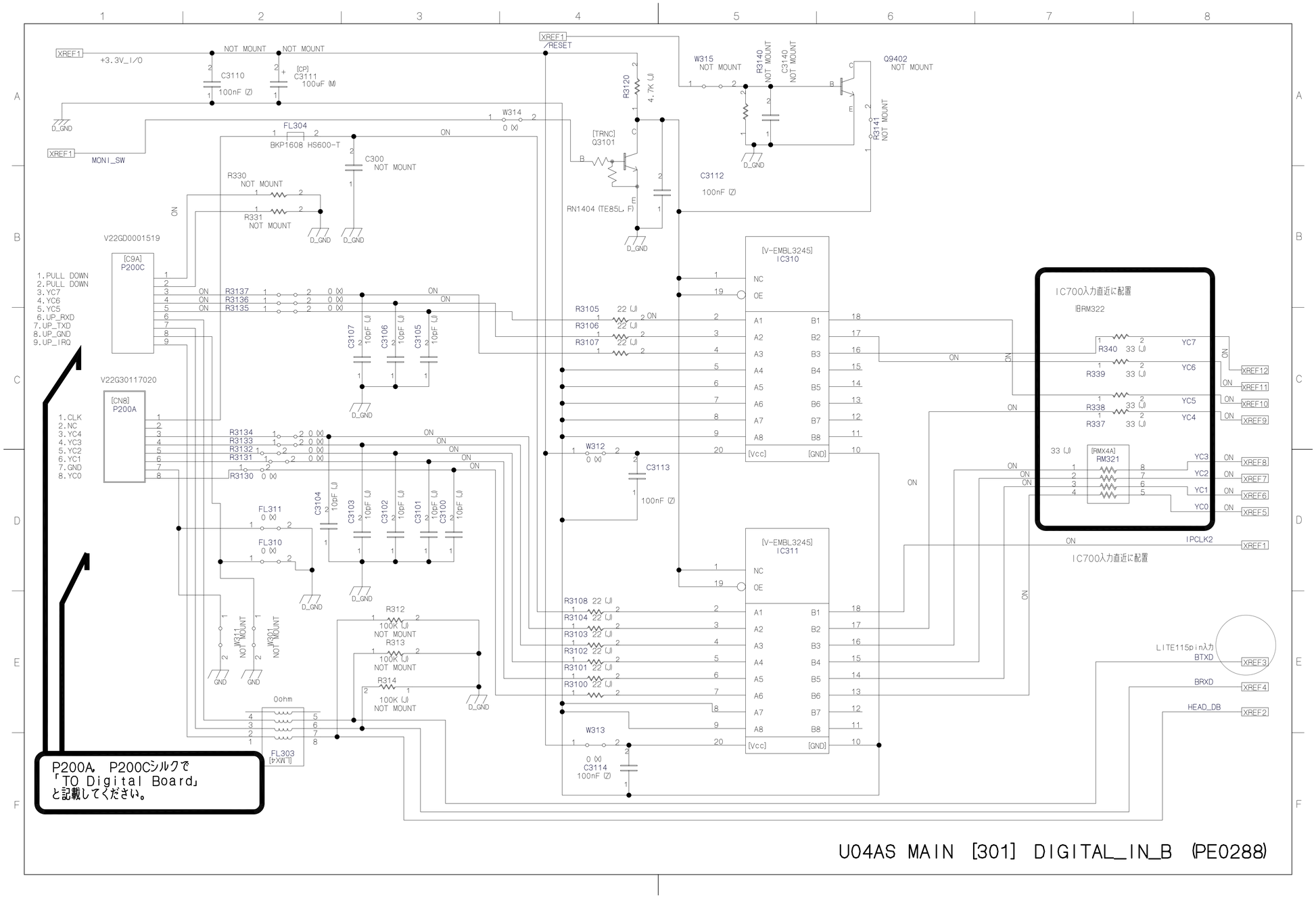



U04AS MAIN [204] EURO COMPONENT IN (PE0288)

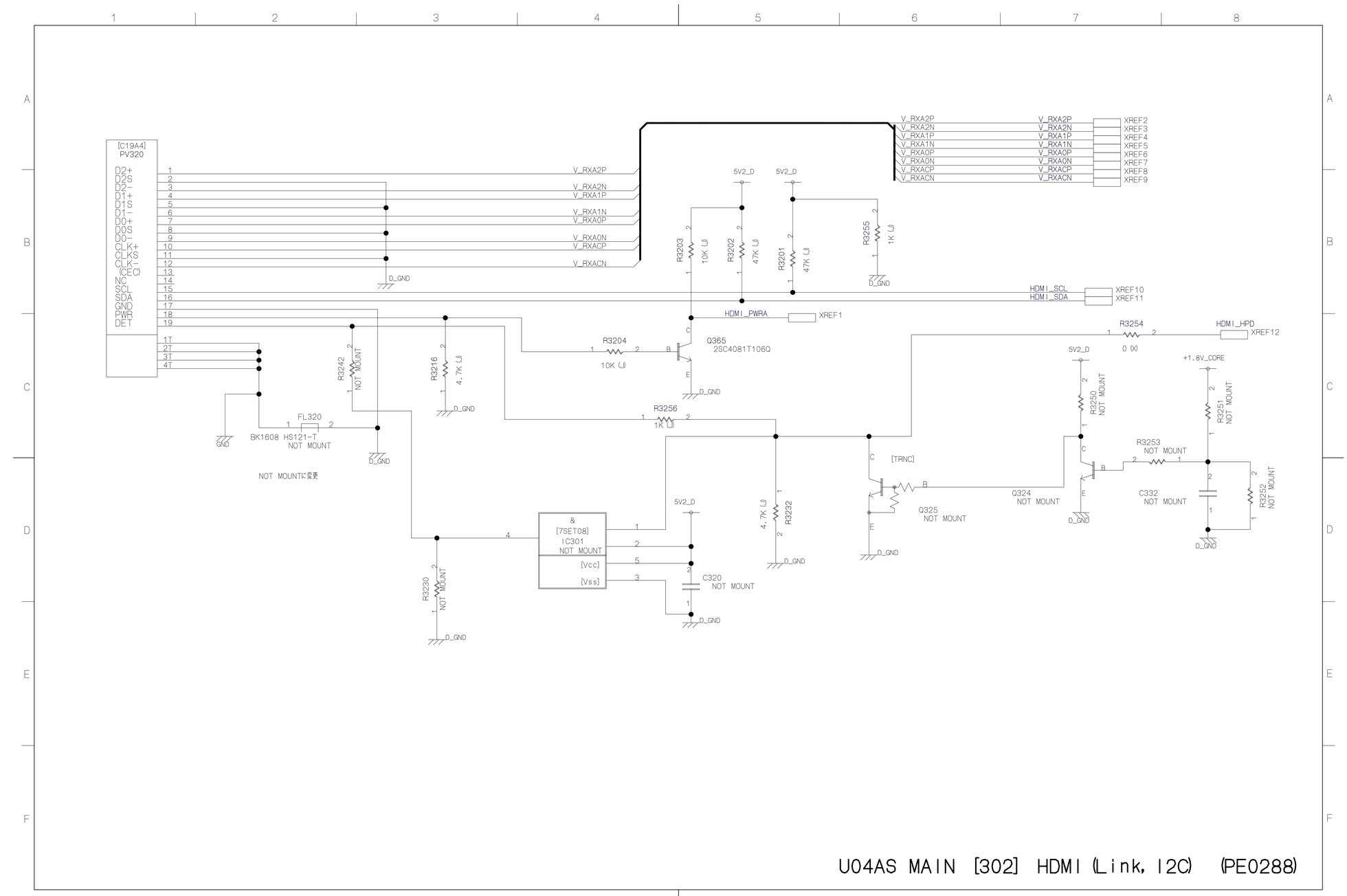

1
2
3
4
5
6
7
8
A
B
C
D
E
F
V_DET_E3
[VARA]
V2601
0
GND
5V2
XREF1
TO U03A FRONT_AV [1] FRONT-AV (PE0287)
P270A → P270B
B10B-PH-K-S (LF) (SN)
[C10A]
P270A
S_SW E3
GND
V_E3
GND
L_FRONT_CS
R_FRONT_CS
GND
L_CS
R_CS
TUNER GND
2mmピッチ
W2601
0 (X)
ON
[FL09B]
FL260
W2602
0 (X)
C2601
16V
10uF (M)
R2601
47K (J)
R2602 (CP)
47K (J)
R2603
100 (J)
NOT MOUNT
Q2601
2SC4116-Y (TE85L, F)
NOT MOUNT
C2602
100nF (K)
V_EF_E3
XREF2
R2604
390 (J)
W2600
[VARA]
V2602
L_FRONT_CS
R_FRONT_CS
L_CS
R_CS
基板にシルクで
「TO FRONT AV」
と記載してください。
U04AS MAIN [206] EURO FRONT AV IN (PE0288)


R2706
0 (X)
5V2
L2706
NOT MOUNT
C2705
16V
470uF (M)
R2707
75 (J)
TV_OUT_1
ON
(cp)
R2705
10K (J)
C2701
1uF (K)
C2702
1uF (K)
V_TV
[V-IC1501]
IC271
SW
OUT
VCC
IN1
GND
IN2
MM1508 XNRE (R)
[TRNC]
Q2703
MINI_MONI1
RN1404 (TE85L, F)
R2704
NOT MOUNT
C2704
10V
100uF (M)
C2703
NOT MOUNT
[CP]
R2703
0 (X)
[TRNC]
Q2702
R2702
4.7K (J)
[TRP]
Q2701
R2719
NOT MOUNT
R2701
100 (J)
2SA1162-Y (TE85R, F)
R2717
0 (X)
V05A00008400
[L2D]
L2701
TEM2028 AH
V_DTV
R2718
0 (X)
TV_OUT1_MUTE
C2715
16V
470uF (M)
R2716
75 (J)
TV_OUT_2
R2715
10K (J)
C2711
1uF (K)
C2712
1uF (K)
C2713
NOT MOUNT
[TRNC]
Q2713
MINI_MONI2
R2714
NOT MOUNT
R2710
4.7K (J)
R2713
0 (X)
[TRNC]
Q2712
[TRP]
Q2711
R2712
NOT MOUNT
R2711
100 (J)
TV_OUT2_MUTE
L2701の#3GNDはPJ212の2pinから亜鉛で引く
U04AS MAIN [207] EURO TV OUT (PE0288)

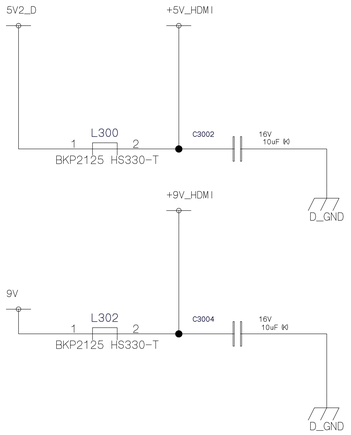

+3.3V_DVI
R3020
220 (F)
1
2
28
[V-U8541]
3/7
IC700
DVI REXT
XREF8
V_RXA2P
31
DVI RX2+
XREF3
V_RXA2N
32
DVI RX2-
XREF7
V_RXA1P
34
DVI RX1+
XREF2
V_RXA1N
35
DVI RX1-
XREF6
V_RXA0P
39
DVI RX0+
XREF5
V_RXA0N
40
DVI RX0-
XREF1
V_RXACP
42
DVI RXC+
XREF4
V_RXACN
43
DVI RXC-

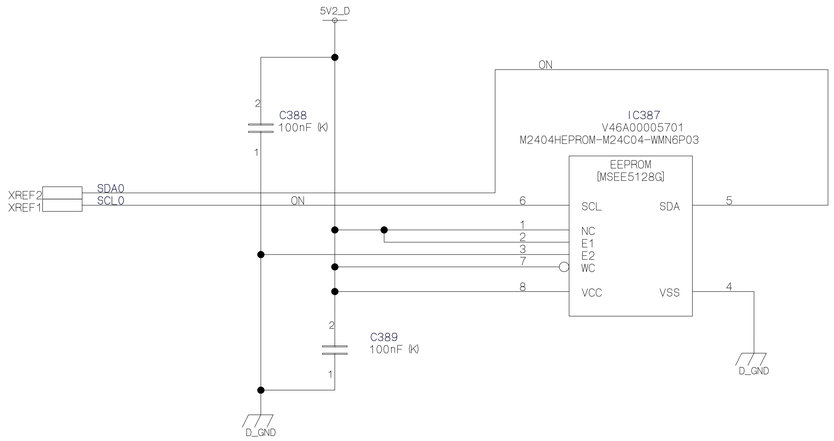



U04AS MAIN [301] DIGITAL_IN_B (PE0288)

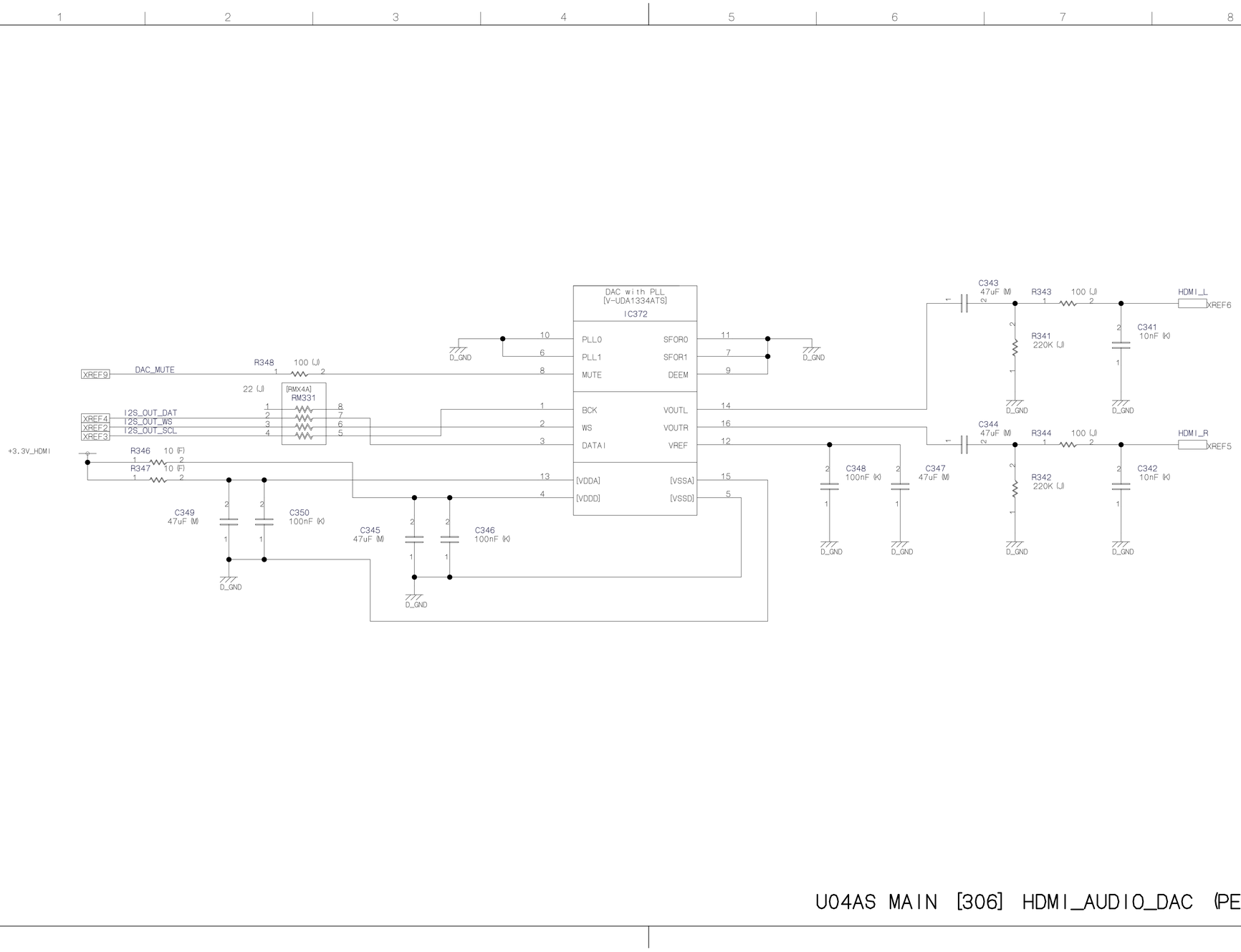



U04AS MAIN [302] HDMI (Link, I2C) (PE0288)

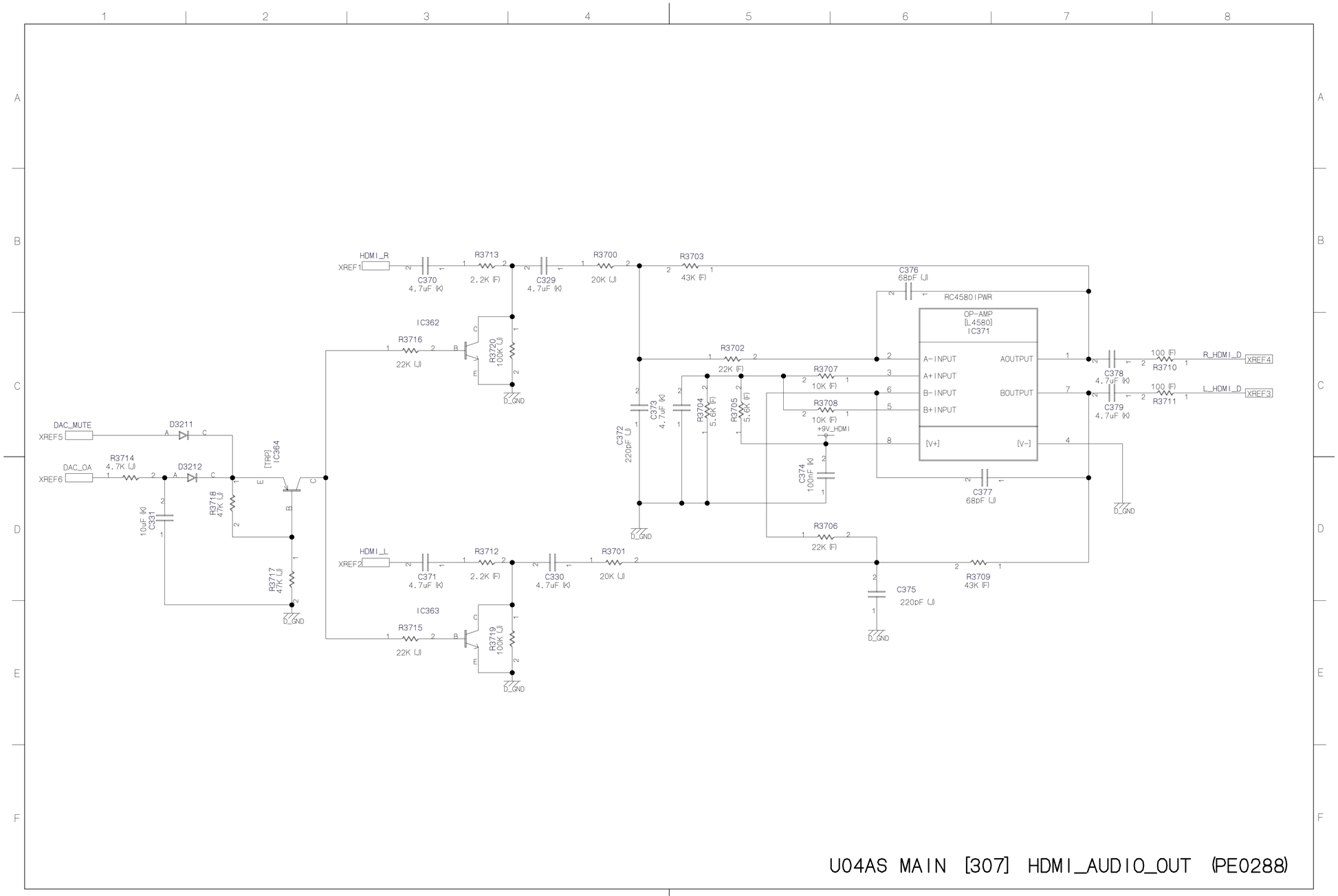



# U04AS MAIN [304] HDMI POWER (PE0288)

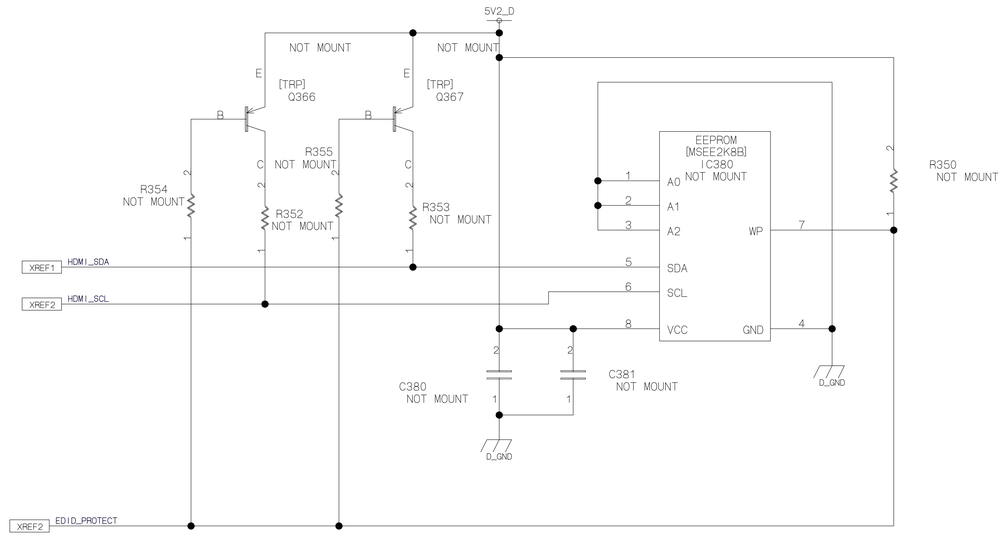



U04AS MAIN [306] HDMI_AUDIO_DAC (PE0288)

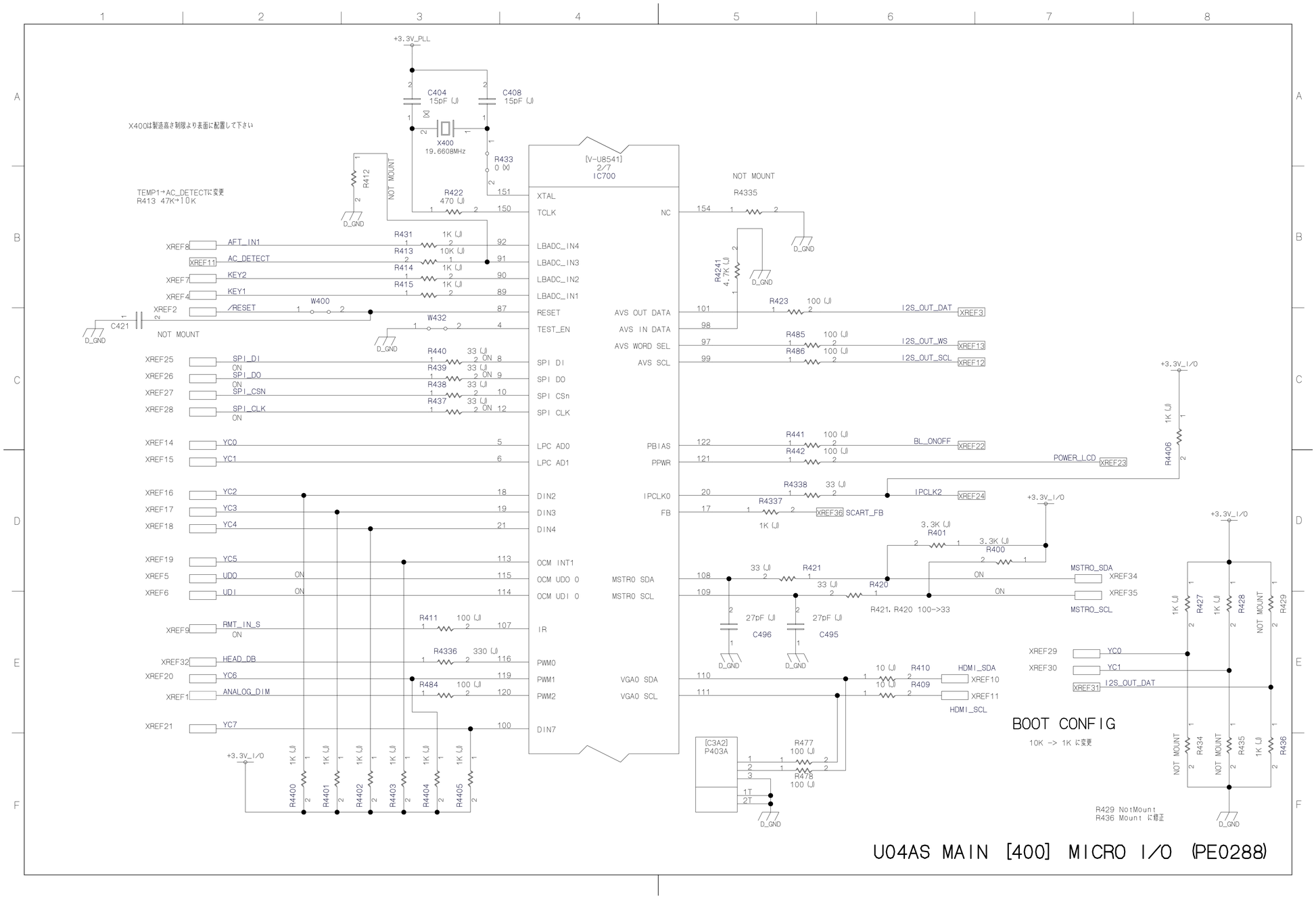


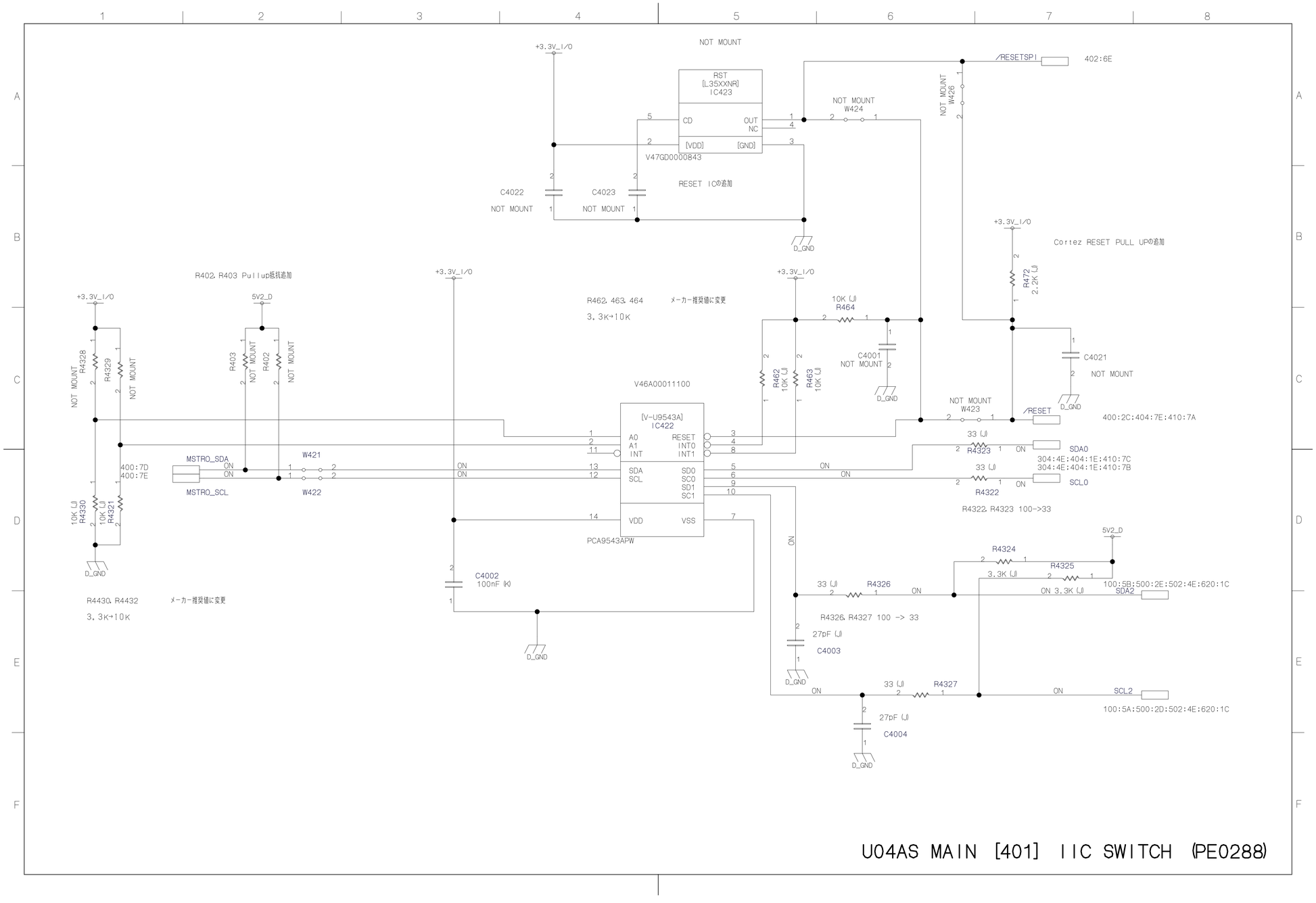

U04AS MAIN [307] HDMI_AUDIO_OUT (PE0288)

LITEでは、EDIDデータ用EEPROM不要

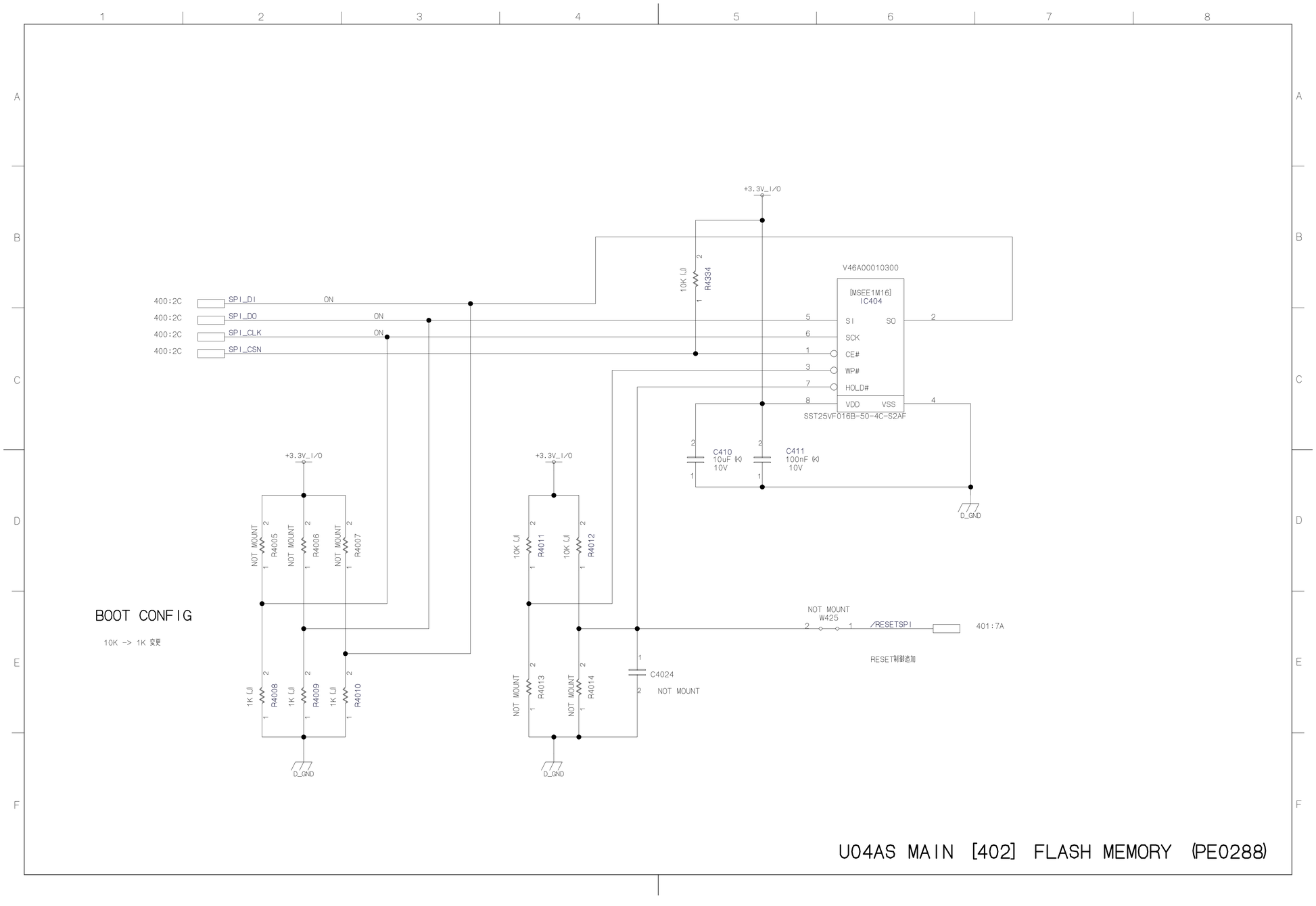


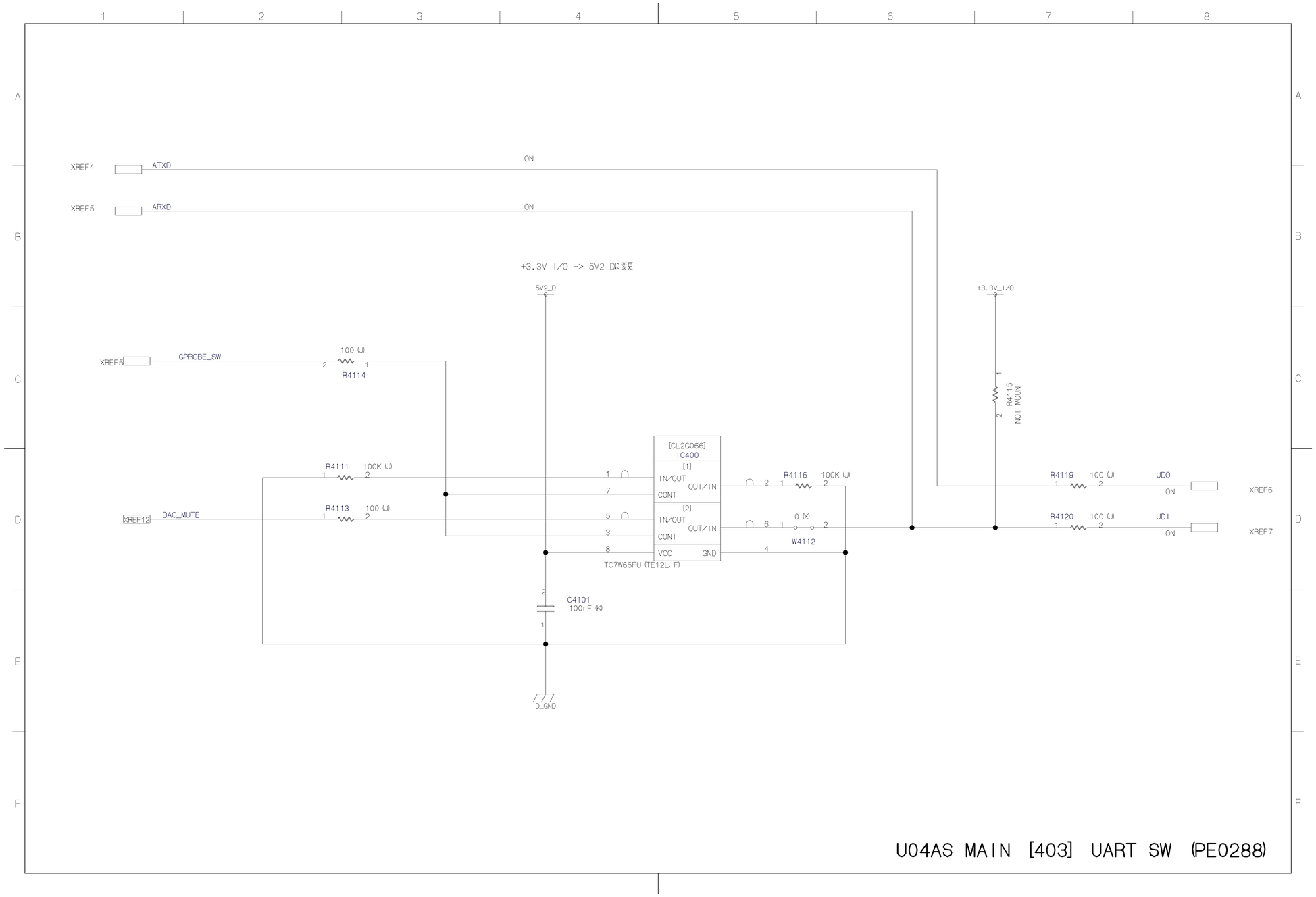

U04AS MAIN [308] HDMI_EEPROM [EDID] (PE0288)


+3.3V_PLL
C404 15pF (J)
C408 15pF (J)
X400 19.6608MHz
X400は製造高さ制限より表面に配置して下さい
R433 0 (X)
R412
NOT MOUNT
D_GND
TEMP1→AC_DETECTに変更
R413 47K→10K
R422 470 (J)
[V-U8541] 2/7 IC700
XTAL
TCLK
NOT MOUNT
R4335
NC
R4241 4.7K (J)
R431 1K (J)
R413 10K (J)
R414 1K (J)
R415 1K (J)
XREF8 AFT_IN1
XREF11 AC_DETECT
XREF7 KEY2
XREF4 KEY1
XREF2 /RESET
W400
C421
NOT MOUNT
W432
LBADC_IN4
LBADC_IN3
LBADC_IN2
LBADC_IN1
RESET
TEST_EN
AVS OUT DATA
AVS IN DATA
AVS WORD SEL
AVS SCL
R423 100 (J)
R485 100 (J)
R486 100 (J)
I2S_OUT_DAT
I2S_OUT_WS
I2S_OUT_SCL
XREF3
XREF13
XREF12
XREF25 SPI_DI
XREF26 SPI_DO
XREF27 SPI_CSN
XREF28 SPI_CLK
R440 33 (J)
R439 33 (J)
R438 33 (J)
R437 33 (J)
SPI DI
SPI DO
SPI CSn
SPI CLK
XREF14 YC0
XREF15 YC1
LPC AD0
LPC AD1
PBIAS
PPWR
R441 100 (J)
R442 100 (J)
BL_ONOFF
POWER_LCD
XREF22
XREF23
+3.3V_I/O
R4406 1K (J)
XREF16 YC2
XREF17 YC3
XREF18 YC4
DIN2
DIN3
DIN4
IPCLK0
FB
R4338 33 (J)
R4337 1K (J)
IPCLK2
XREF24
XREF36 SCART_FB
XREF19 YC5
XREF5 UDO
XREF6 UDI
OCM INT1
OCM UDO 0
OCM UDI 0
MSTRO SDA
MSTRO SCL
R401 3.3K (J)
R400 3.3K (J)
R421 33 (J)
R420 33 (J)
R421, R420 100->33
27pF (J) C496
27pF (J) C495
MSTRO_SDA
MSTRO_SCL
XREF34
XREF35
XREF9 RMT_IN_S
XREF32 HEAD_DB
XREF20 YC6
XREF1 ANALOG_DIM
XREF21 YC7
R411 100 (J)
R4336 330 (J)
R484 100 (J)
IR
PWM0
PWM1
PWM2
DIN7
VGA0 SDA
VGA0 SCL
R410 10 (J)
R409 10 (J)
HDMI_SDA
HDMI_SCL
XREF10
XREF11
XREF29 YC0
XREF30 YC1
XREF31 I2S_OUT_DAT
BOOT CONFIG
10K -> 1K に変更
R4400 1K (J)
R4401 1K (J)
R4402 1K (J)
R4403 1K (J)
R4404 1K (J)
R4405 1K (J)
[C3A2] P403A
R477 100 (J)
R478 100 (J)
1T
2T
R427 1K (J)
R428 1K (J)
R429 NOT MOUNT
R434 NOT MOUNT
R435 NOT MOUNT
R436 1K (J)
R429 NotMount
R436 Mount に修正
U04AS MAIN [400] MICRO I/O (PE0288)

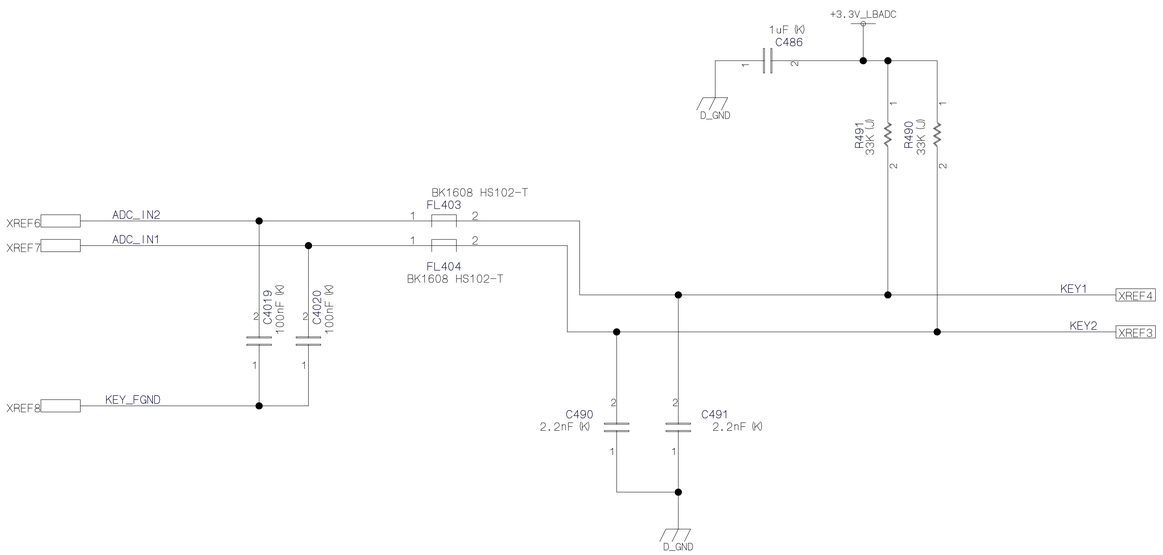


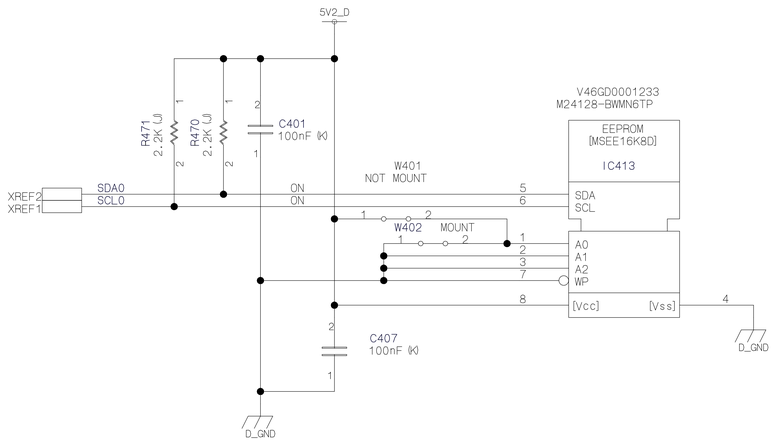

U04AS MAIN [401] IIC SWITCH (PE0288)

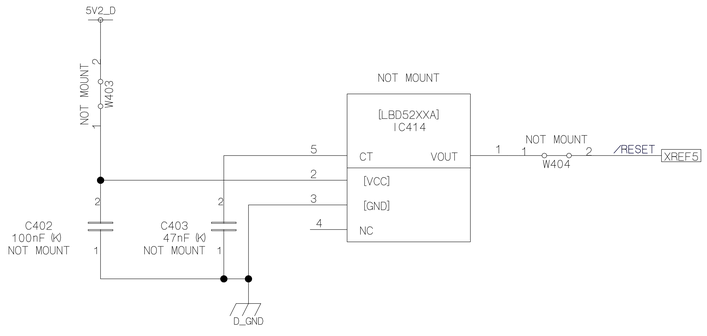

+3.3V_I/O
V46A00010300
[MSEE1M16]
IC404
SST25VF016B-50-4C-S2AF
SI
SO
SCK
CE#
WP#
HOLD#
VDD
VSS
10K (J)
R4334
400:2C
SPI_DI
SPI_DO
SPI_CLK
SPI_CSN
ON
C410
10uF (K)
10V
C411
100nF (K)
10V
D_GND
NOT MOUNT
R4005
R4006
R4007
1K (J)
R4008
R4009
R4010
10K (J)
R4011
R4012
R4013
R4014
C4024
W425
/RESETSPI
401:7A
RESET制御追加
BOOT CONFIG
10K -> 1K 変更
U04AS MAIN [402] FLASH MEMORY (PE0288)




U04AS MAIN [403] UART SW (PE0288)




U04AS MAIN [404] E2P ROM OTHER (PE0288)

時定数変更
R452 1K→3.3K
C471 47PF→100nF

+3.3V_ANG
R452 3.3K (J)
C471 10V 100nF (K)
D_GND
D400 MA112-(TX)
5V2_D
W4000 0 (X)
W4000 1608->2012
C428 10V 1uF (K)
UREG [LPQXXXEZ] IC402
ON/OFF
DCIN
DCOUT
NC
[GND]
C427 10V 10uF (K)
[CP] C426
NOT MOUNT
+2.5V_DDR
+1.8V_CORE
D404 [DBS]
D405 [DBS]
FL427 BKP2125 HS221-T
+3.3V_HDMI_REG
FL423 BKP2125 HS221-T
C451 10V 100nF (K)
C458 10V 100nF (K)
+3.3V_I/O
Q460 NOT MOUNT 2SC2712-Y (TE85R, F)
C4026 100nF (K) 10V
R495 R496 R497 R459
R460 R461
D406 HDMI_PWRA 302:5C:500:8D
Q461 2SC4116-Y (TE85L, F)
5V2_D
FL402 BKP2125 HS221-T
+3.3V_DVI
C4007 10V 100nF (K)
1.8CORE_OUT
C4025 100nF (K) 10V
1.8CORE_IN
NOT MOUNT
W461
W460
FL401 BKP2125 HS221-T
+1.8VSC_ADC
+1.8V_DVI
FL429 BKP2125 HS221-T
C4005 C4006
FL428 BKP2125 HS221-T
+1.8V_ADC
FL425 BKP2125 HS221-T
+1.8V_DLL
FL426 BKP2125 HS221-T
+1.8V_PLL
FL424 BKP2125 HS221-T
+1.8V_CORE
[FL07A] C430
CKD510JB1A105ST
C456 C457 C452 100nF (K)

放熱フィンパタンは広く

IC402??路対応としてPQ033EZ01ZPHで回路図は作成
通常は、PQ033ENAHZPHを使用します。

部品構成表作成時は注意。

R456 1K→0
+2.5V
R456 0 (X)
[SBD] D403 RB161VA-20TR
V47GD0001109
C473 100pF (J) 50V
[L2106] IC403
SS
RUN
VIN
BST
LX
FB
COMP
Vref
PGND
SGND
MP2106DK-LF-Z
C454 25V 10nF (K)
L430 SLF7032T-4R7M1R7-2PF
W4001 0 (X)
C429 10V 10uF (K)
C453 25V 6.8nF (K)
C436 25V 6.8nF (K)
R450 6.8K (D)
C455 25V 10nF (K)
[SBD] D407 RB070M-30TFTR
C441 6.3V 22uF (M)
C459 6.3V 22uF (M)
R451 0 (X)
R455 10K (F)
R457 10K (F)
R458 200 (J)

GNDは広く

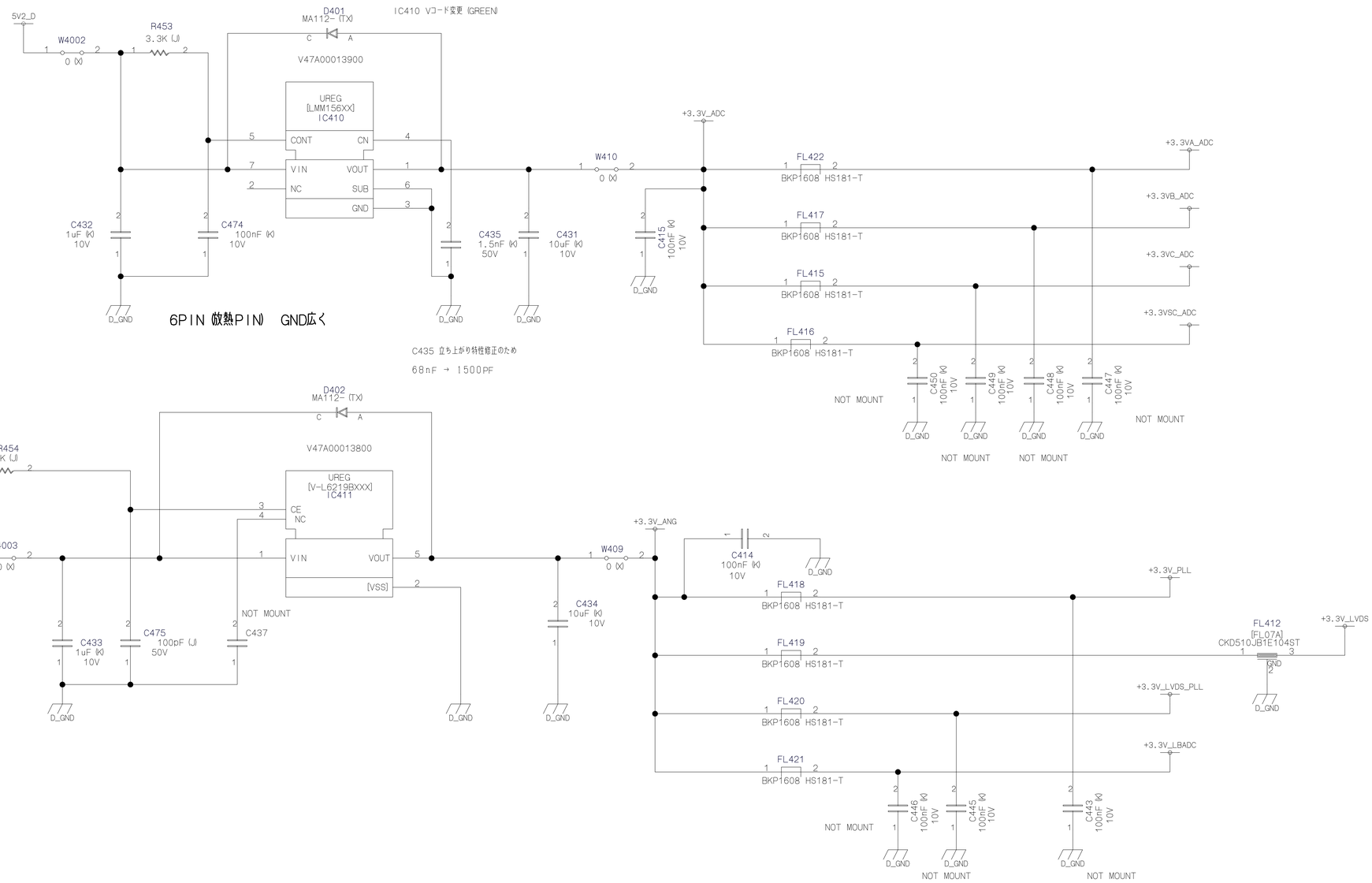
FeedBack経路は短くして下さい。

隣接する信号とはD_GNDでアイソレーションして下さい

U04AS MAIN [406] CORTEZ REG 1 (PE0288)

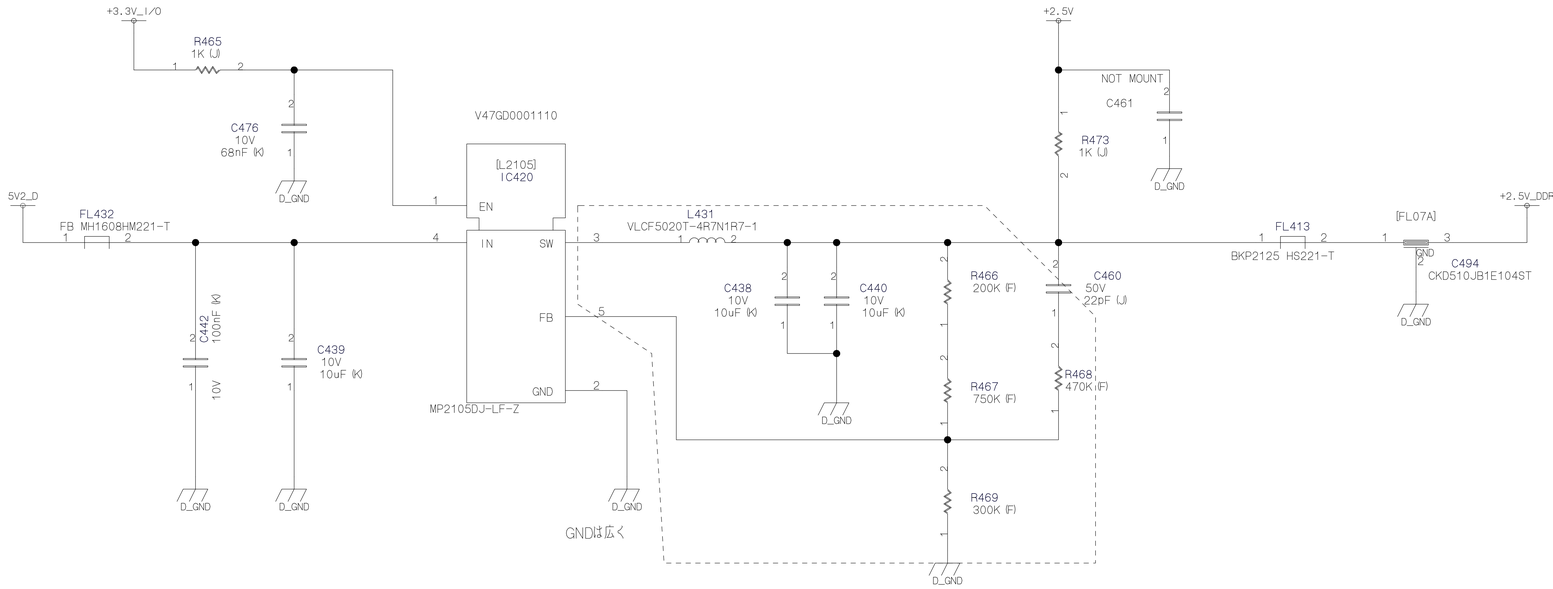
時定数修正 R453 1K→3.3K

C474 100PF →100nF




# U04AS MAIN [407] CORTEZ REG 2 (PE0288)

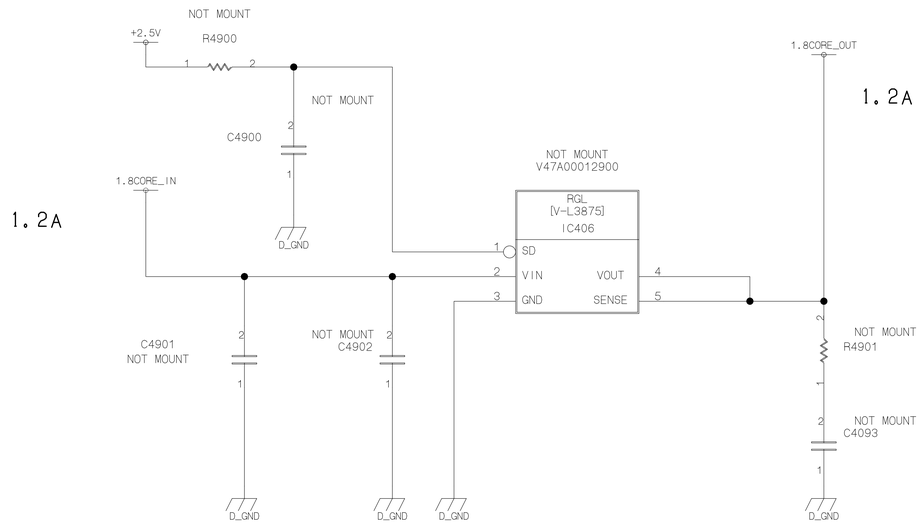
RESET用2．5Vラインノイズ対策　追加
R473　0Ω→1K




FeedBack経路は短くして下さい。

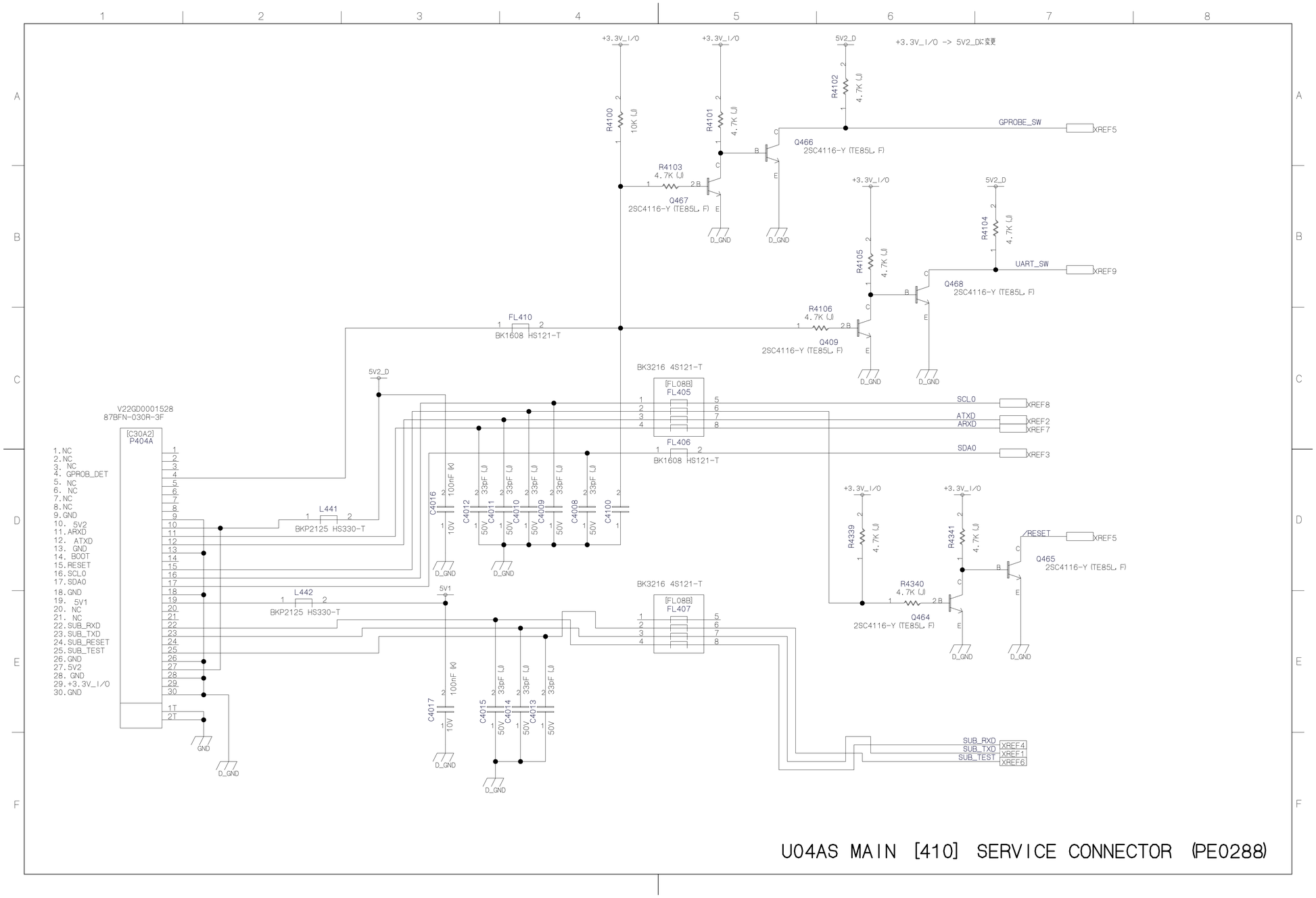
隣接する信号とはD_GNDでアイソレーションして下さい

U04AS MAIN [408] CORTEZ REG 3 (PE0288)

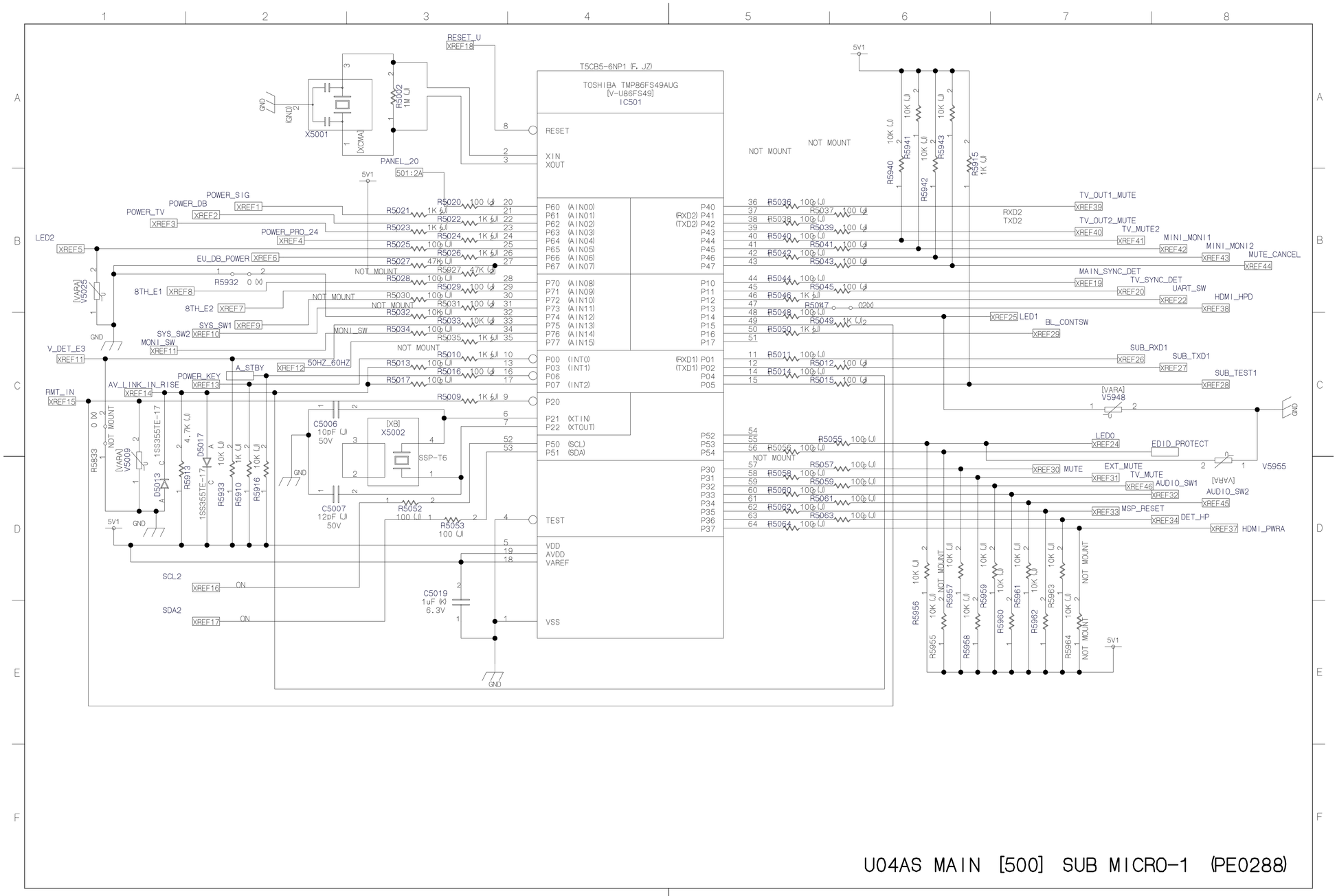



GNDは広く

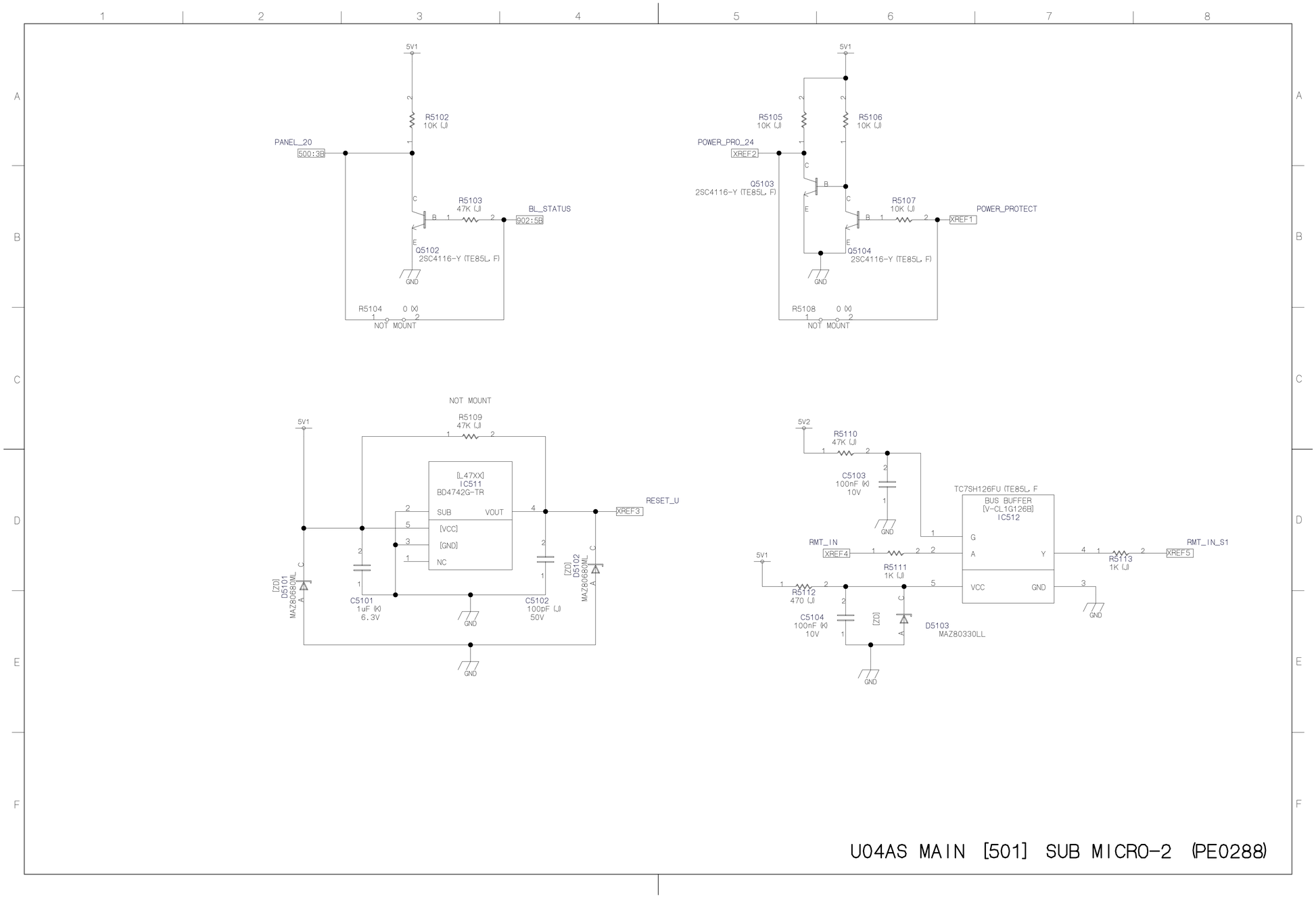
# U04AS MAIN [409] CORTEZ REG 4 (PE0288)



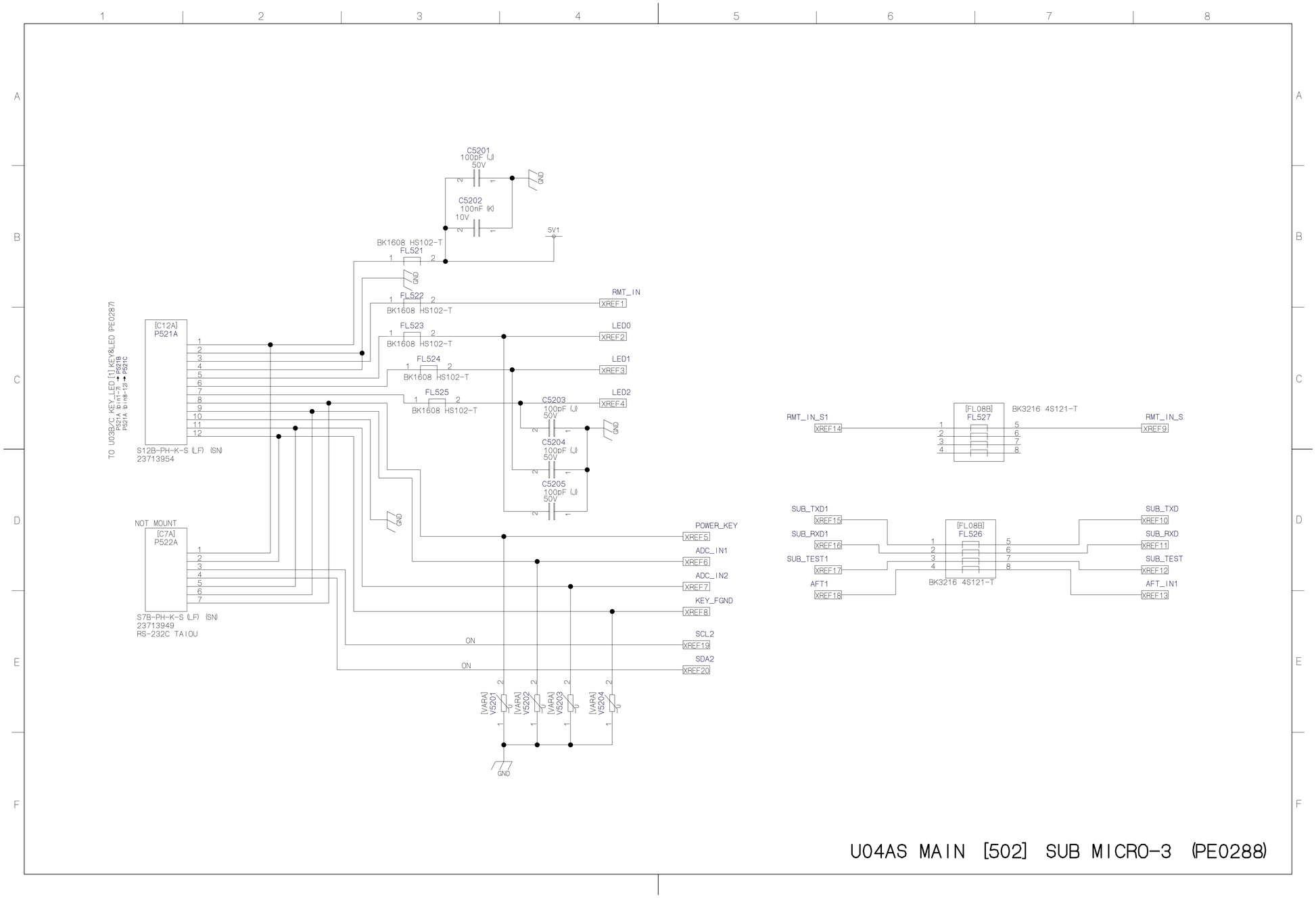

U04AS MAIN [410] SERVICE CONNECTOR (PE0288)



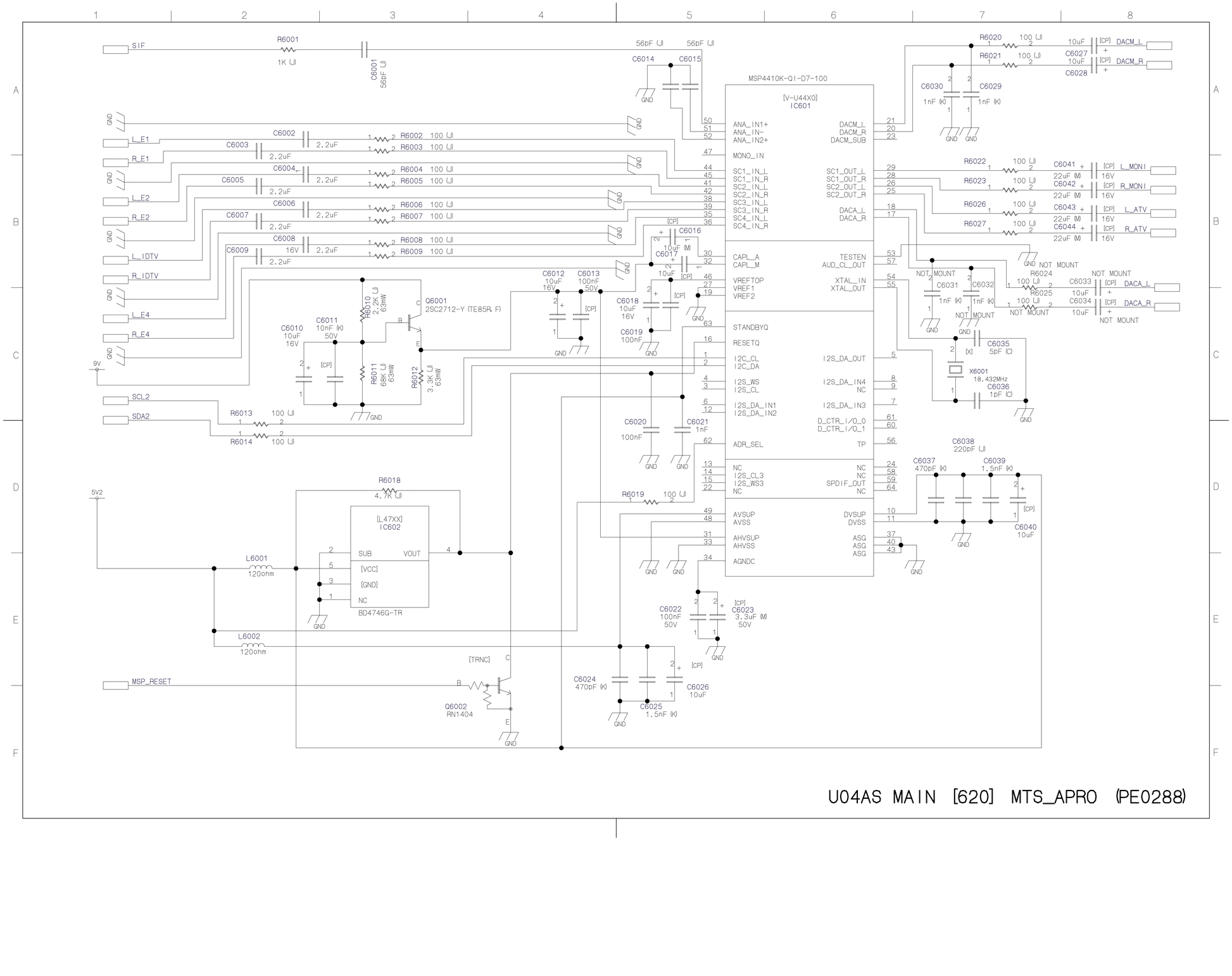

U04AS MAIN [500] SUB MICRO-1 (PE0288)



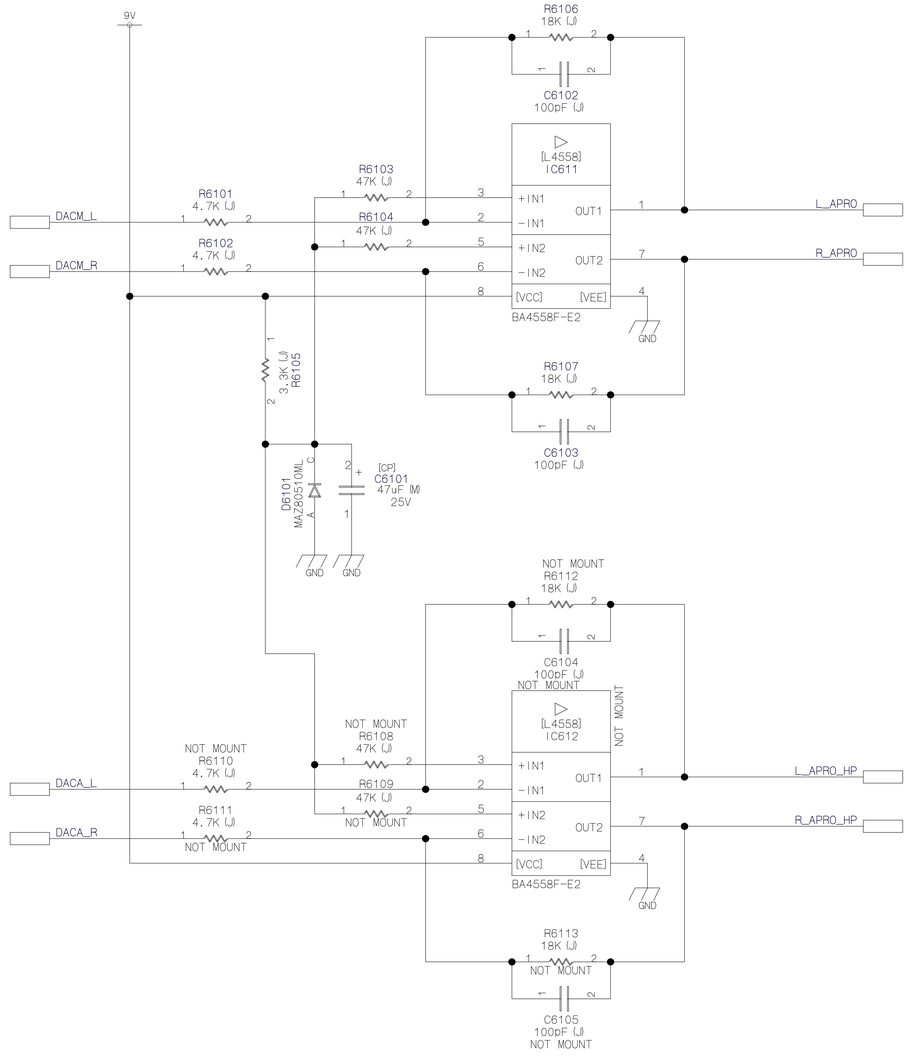

# U04AS MAIN [501] SUB MICRO-2 (PE0288)




U04AS MAIN [502] SUB MICRO-3 (PE0288)




U04AS MAIN [620] MTS_APRO (PE0288)




U04AS MAIN [621] AUDIO_AMP1 (PE0288)

24V_AUDIOラインはリターンGNDラインとペアで
最短で配置してください　(電流値：2.8A)

24V_AUDIO
GND
D6201 MAZ83300ML
C6201 1nF (K) 50V
C6202 35V 2200uF
KDS160-RTK/P D6202
R6202 150K (J)
C6203 3pF (C)
L6201 SLF7055T
2007-3-12 C6224, C6225 変更
C6204 100nF (K) 50V 76285104Q
C6205 0.22uF 50V 760927960
D6205 KDS160-RTK/P
[CP] C6206 1000uF 35V R_AMP
RSX301L-30 (TE25)
D6208
C6216 100nF (K) 50V
C6218 47nF (K)
C6219 10uF (M)
新規 (ダミー)
48104-0520
[C5A] P621A
L
R
DET1_HP
TO U03A FRONT_AV (1) FRONT-AV PE0287
P621A ➡ P621B

[V-HB15106] IC621
OUT1 VS1
VD1 HB1
STBYL DVDD
PWM1 HB2
IN1 VS2
CBIAS OUT2
ROSC VD2
GND MUTEL
VREF PWM2
PROT IN2
GND

C6210 100nF (K)
R_APRO
C6208 1uF (K)
R6201 27K (J)
C6211 4.7uの代用品 76619143C
R6203 33K (J)
C6213 47nF (K)
R6204 0 (X)
C6225
C6212 4.7uの代用品 76619143C
C6217 100nF (K)
RSX301L-30 (TE25) D6209
L6202 SLF7055T
C6223 0.22uF 50V 760927960
KDS160-RTK/P D6206
[CP] C6207 1000uF 35V L_AMP
50V 100nF (K) C6222 76285104Q
2007-3-12 C6222, C6223 変更
C6221 35V 2200uF
C6220 100nF (K) 50V

スピーカーライン
GNDラインと
ペアで配置

L_APRO
C6209 1uF (K)
R6205 27K (J)
2.2uの代用品 76619141C

C6210及びC6220はVD1、VD2の直近に配置願います。
アルミ電解C6221、C6202は可能な範囲で
VD1、VD2に近づけて配置願います。

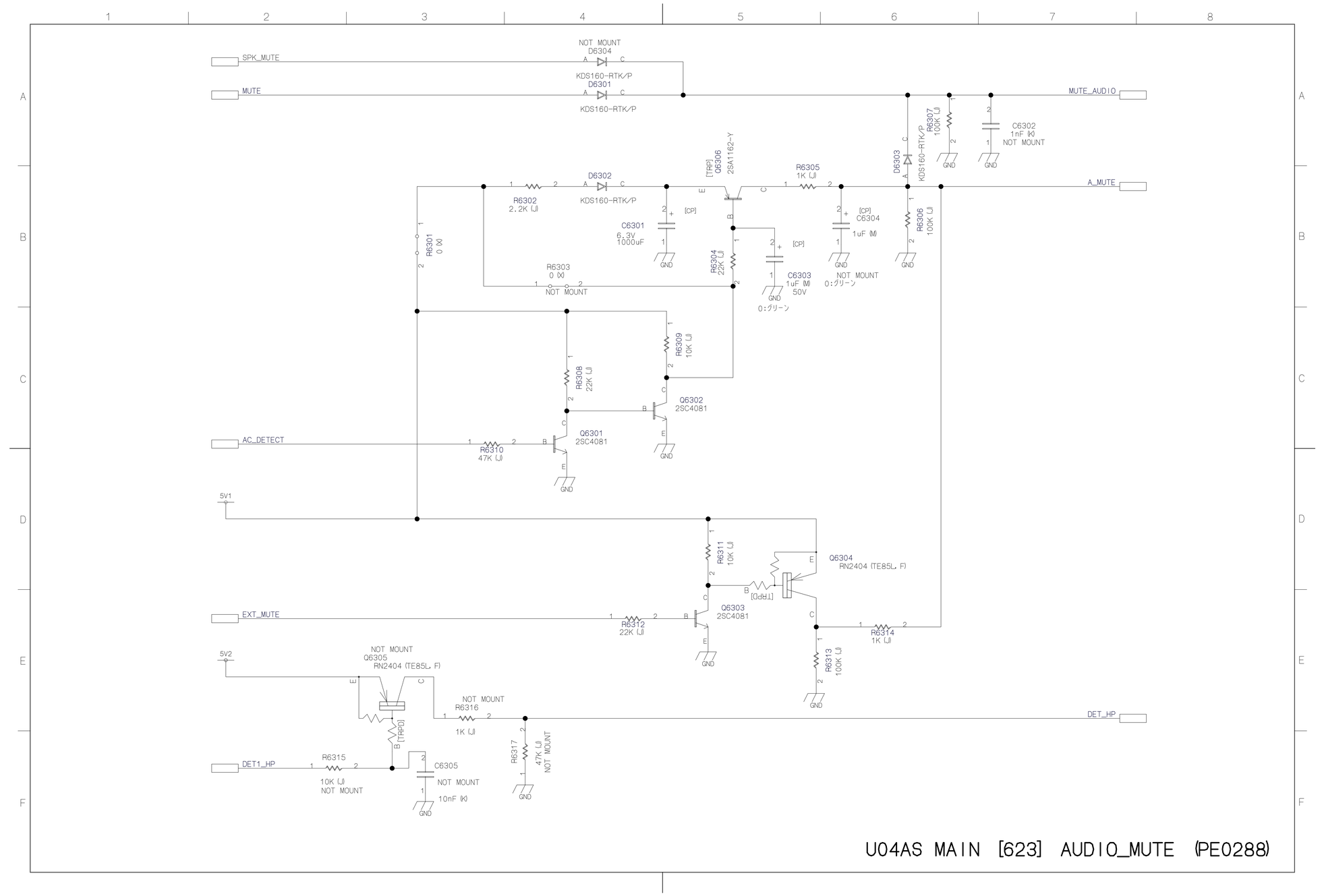
R6206 47K (J) 63mW
KDS160 D6203
A_STBY
A_MUTE
D6204 KDS160
R6207 47K (J) 63mW
Q6201 2SC4116-Y
R6212 10K (J) 63mW
D6210 MAZ80510ML NOT MOUNT
C6214 100nF (K) 50V

L及びRチャンネルのバランス配置は考慮しなくてもかまいません。

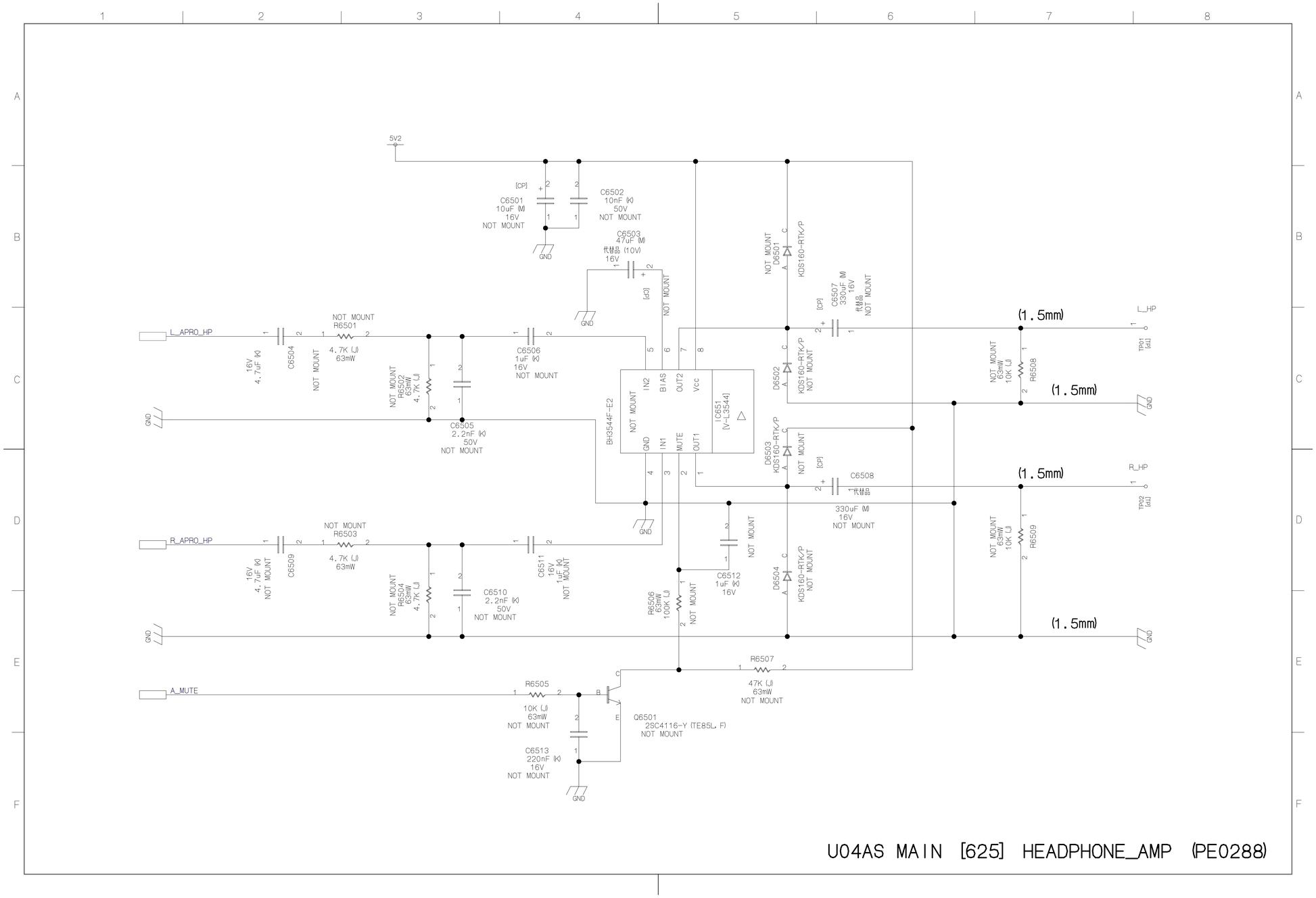
R6209 47K (J) 63mW
MUTE_AUDIO
R6208 47K (J) 63mW
Q6202 2SC4116-Y
R6210 10K (J) 63mW
D6211 MAZ80510ML NOT MOUNT
C6215 100nF (K) 50V

R6211 150K (J)
C6224 3pF (C)
D6207 KDS160-RTK/P

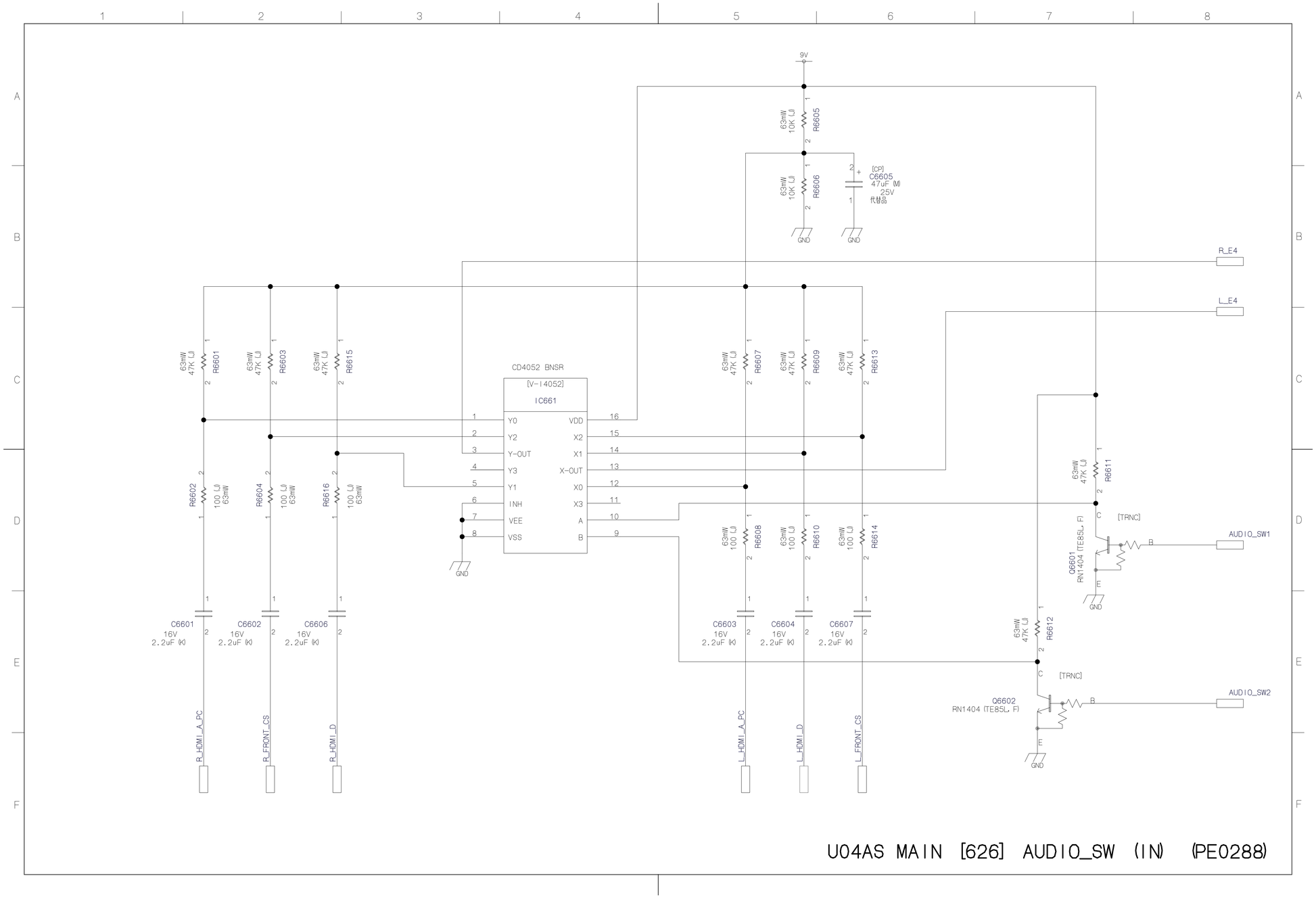
U04AS MAIN [622] AUDIO_AMP2 (PE0288)



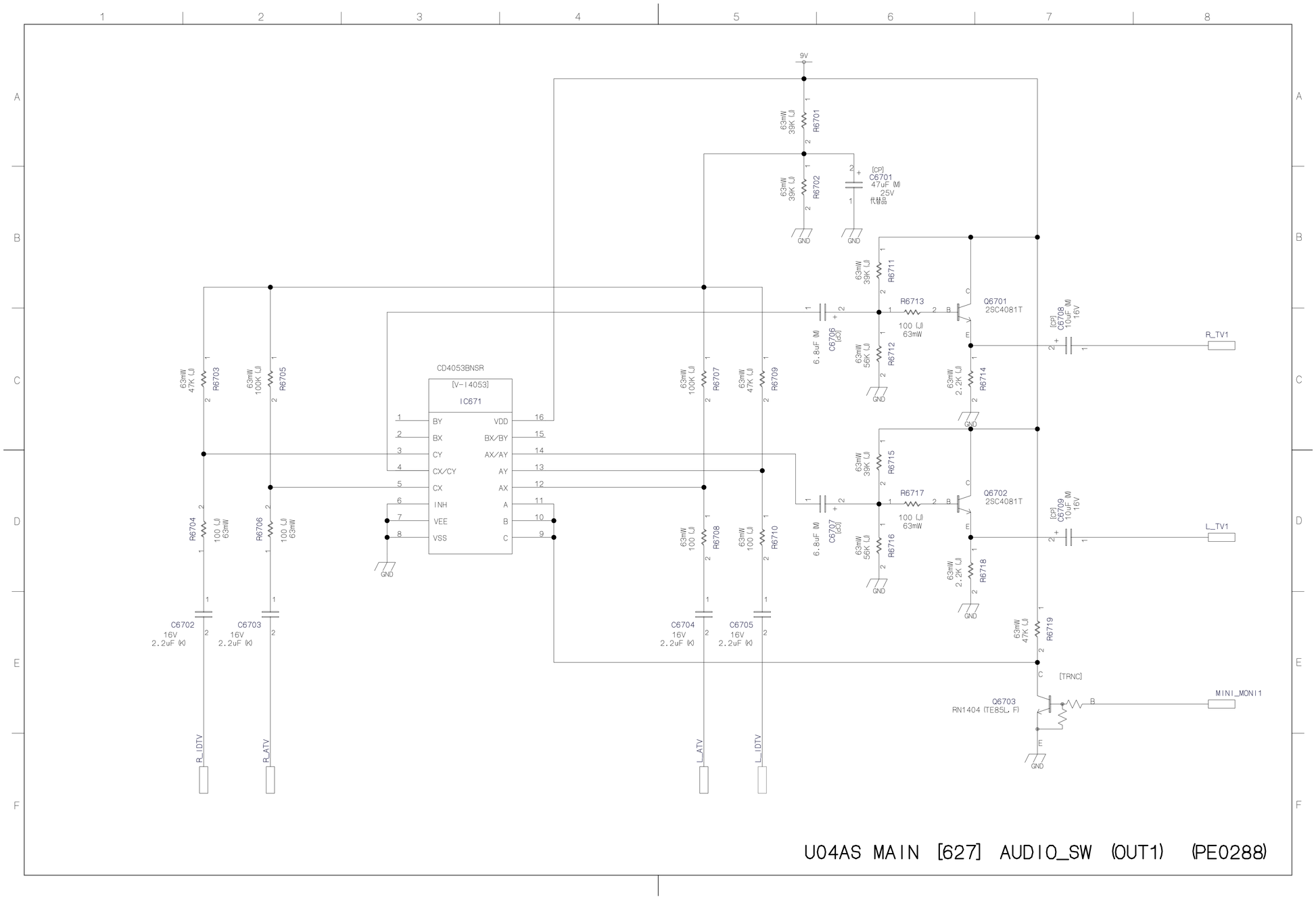

U04AS MAIN [623] AUDIO_MUTE (PE0288)



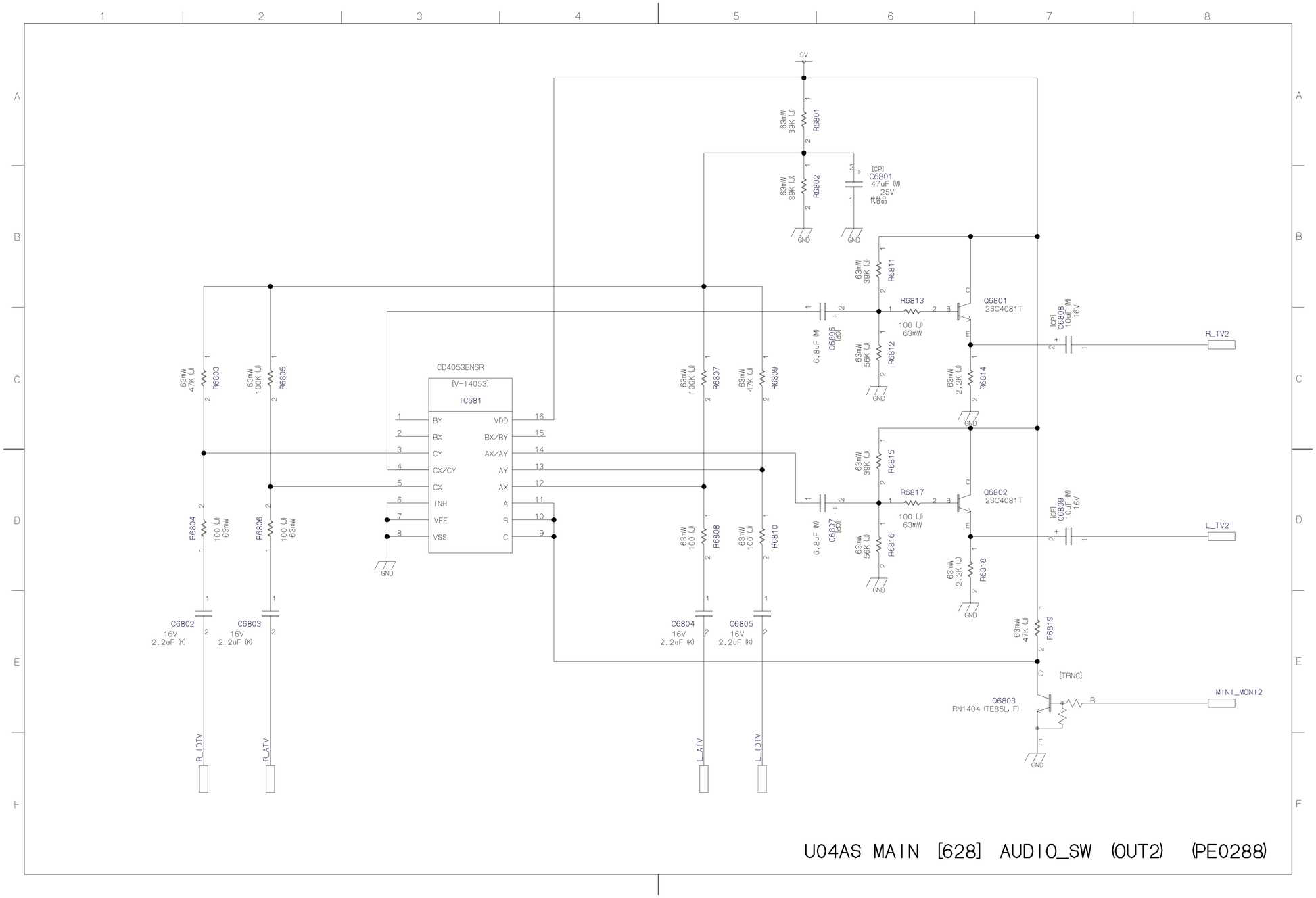

U04AS MAIN [625] HEADPHONE_AMP (PE0288)



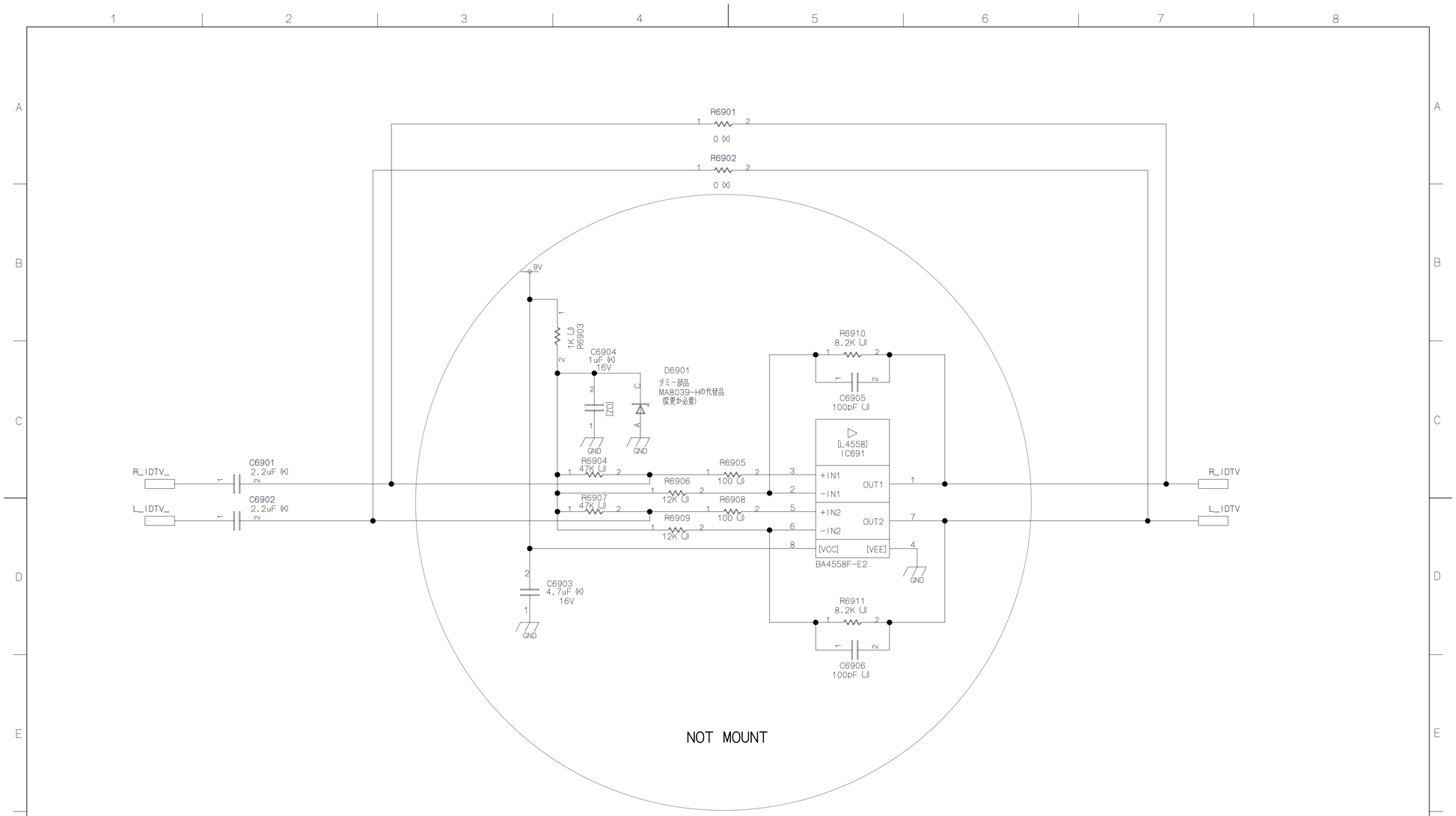

U04AS MAIN [626] AUDIO_SW (IN) (PE0288)




U04AS MAIN [627] AUDIO_SW (OUT1) (PE0288)

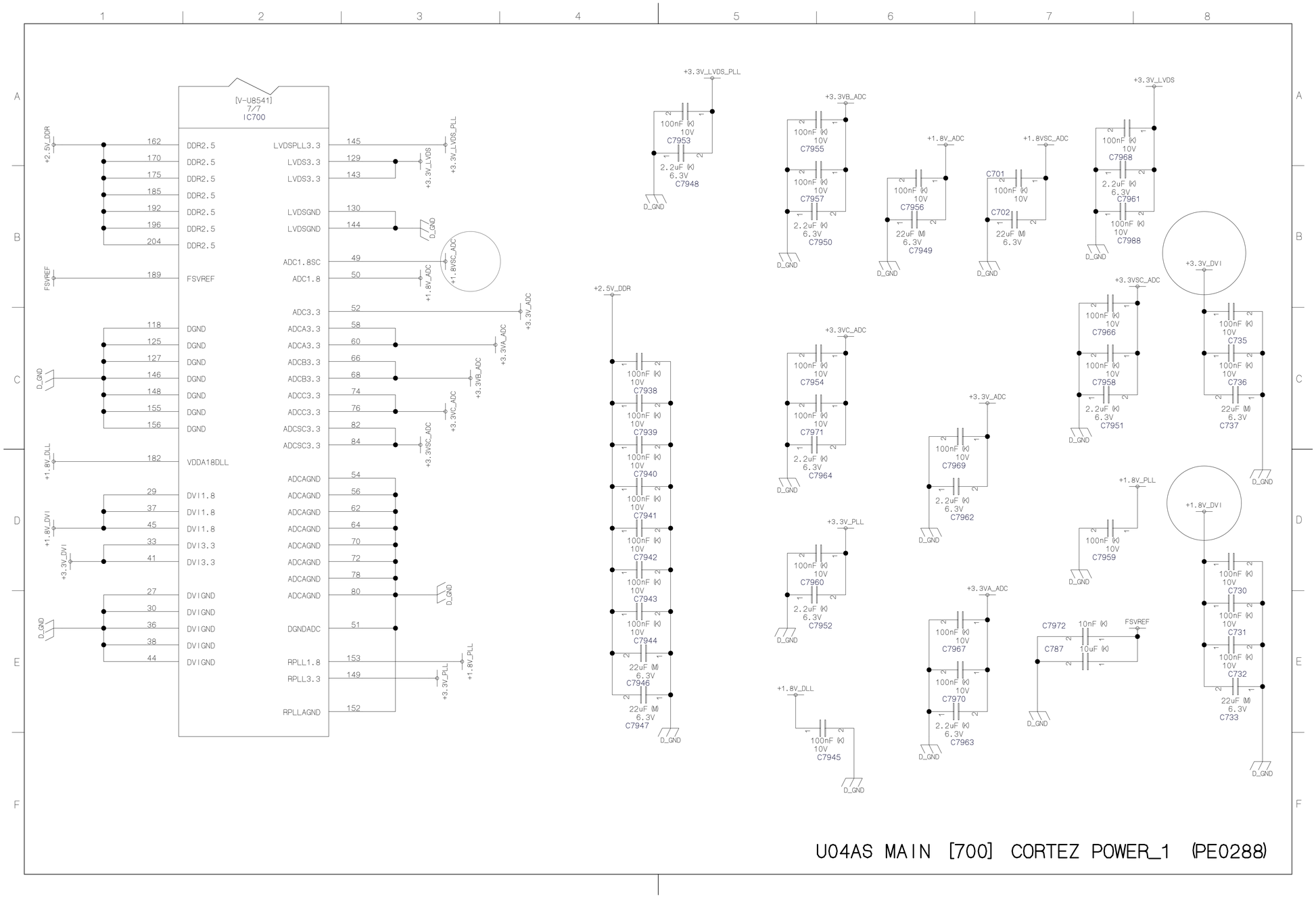



U04AS MAIN [628] AUDIO_SW (OUT2) (PE0288)

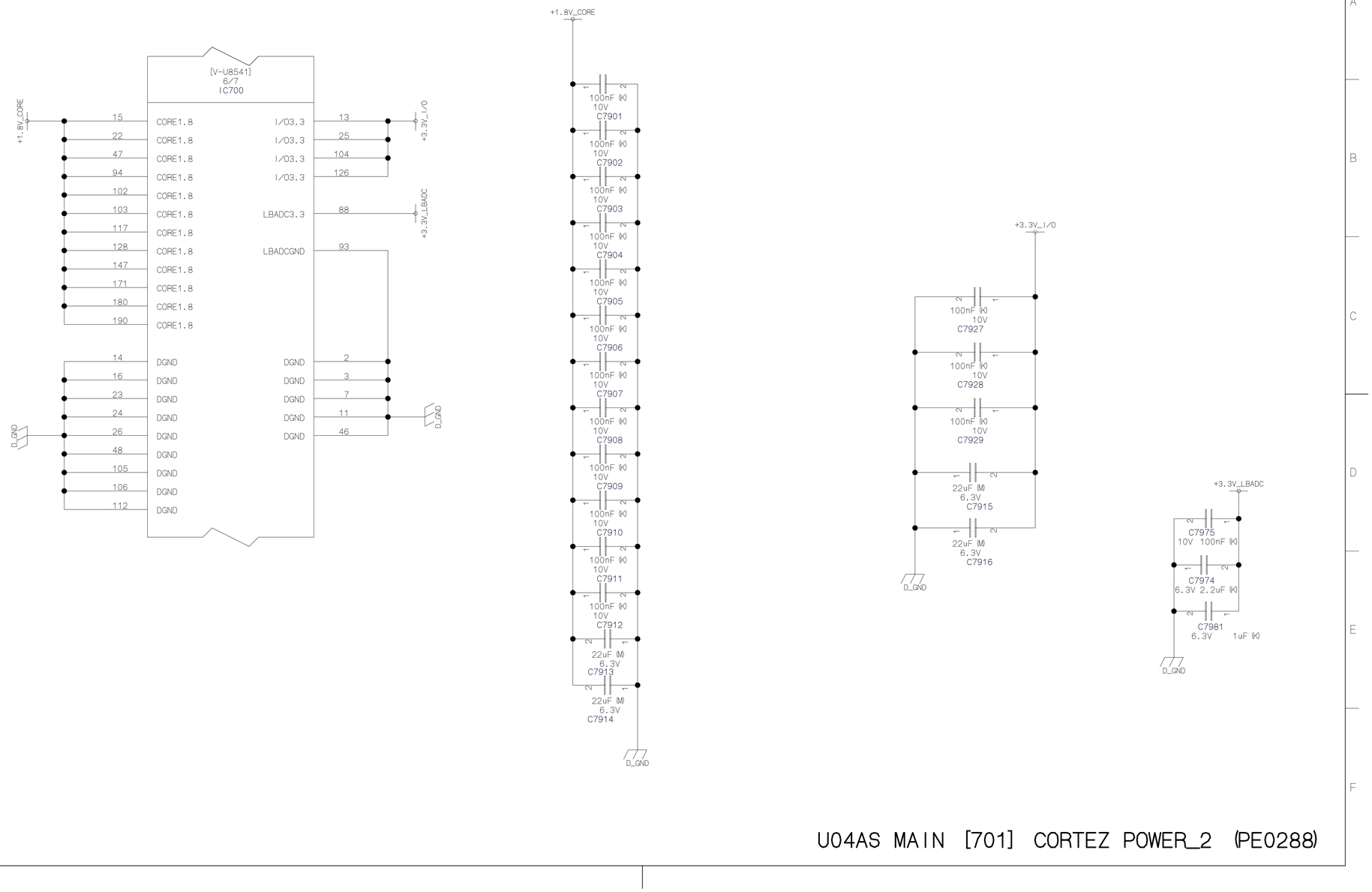



この回路はPJ212Aの近くに配置願います。

U04AS MAIN [629] DB_AUDIO_AMP (PE0288)




U04AS MAIN [700] CORTEZ POWER_1 (PE0288)




U04AS MAIN [701] CORTEZ POWER_2 (PE0288)

703:1A:703:4A
/FSCAS, /FSCS [0], /FSRAS, /FSWE, FSADDR [0-12], FSBKSEL [0-1], FSCKE, FSCLK+, FSCLK-, FSDATA [0-15], FSDQM [0-1], FSDQS [0-1]

[V-U8541]
4/7
IC700

FSDATA [11] FSDATA [10] FSDATA [9] FSDATA [8] — [RMX4A] RM701 47 (J)
FSDATA [15] FSDATA [14] FSDATA [13] FSDATA [12] — [RMX4A] RM700 47 (J)
FSDATA [3] FSDATA [2] FSDATA [1] FSDATA [0] — [RMX4A] RM702 47 (J)
FSDATA [7] FSDATA [6] FSDATA [5] FSDATA [4] — [RMX4A] RM703 47 (J)

| | | |
|---|---|---|
| 208 | FSDATA0 | |
| 207 | FSDATA1 | |
| 203 | FSDATA2 | |
| 202 | FSDATA3 | |
| 197 | FSDATA4 | |
| 195 | FSDATA5 | |
| 193 | FSDATA6 | |
| 191 | FSDATA7 | |
| 173 | FSDATA8 | |
| 172 | FSDATA9 | |
| 168 | FSDATA10 | |
| 167 | FSDATA11 | |
| 163 | FSDATA12 | |
| 161 | FSDATA13 | |
| 158 | FSDATA14 | |
| 157 | FSDATA15 | |
| | FSBKSEL1 | 174 — R727 100 (J) — FSBKSEL [1] |
| | FSBKSEL0 | 169 — R728 100 (J) — FSBKSEL [0] |
| | FSCKE | 1 — R729 100 (J) — FSCKE |
| | FSRAS | 159 — R730 100 (J) — /FSRAS |
| | FSCAS | 160 — R731 100 (J) — /FSCAS |
| | FSWE | 164 — R732 100 (J) — /FSWE |
| | FSDQM1 | 166 — R733 47 (J) — FSDQM [0] |
| | FSDQM0 | 199 — R734 47 (J) — FSDQM [1] |
| | FSDQS1 | 165 — R735 47 (J) — FSDQS [0] |
| | FSDQS0 | 200 — R736 47 (J) — FSDQS [1] |
| | | D_GND — R739 33 (J) — /FSCS [0] |
| | FSCLKn | 205 — R740 33 (J) — R761 0 (X) — FSCLK- |
| | FSCLKp | 206 — R741 33 (J) — R762 0 (X) — FSCLK+ |
| | FSADDR12 | 187 — [RMX4A] RM708 100 (J) — FSADDR [12] |
| | FSADDR11 | 183 — FSADDR [9] |
| | FSADDR10 | 179 — FSADDR [4] |
| | FSADDR9 | 186 — FSADDR [11] |
| | FSADDR8 | 201 — R744 100 (J) — FSADDR [10] |
| | FSADDR7 | 198 — R746 100 (J) — FSADDR [8] |
| | FSADDR6 | 194 — R747 100 (J) — FSADDR [7] |
| | FSADDR5 | 188 — R748 100 (J) — FSADDR [6] |
| | FSADDR4 | 184 — R749 100 (J) — FSADDR [5] |
| | FSADDR3 | 181 — R751 100 (J) — FSADDR [3] |
| | FSADDR2 | 178 — [RMX4A] RM710 100 (J) — FSADDR [2] |
| | FSADDR1 | 177 — FSADDR [1] |
| | FSADDR0 | 176 — FSADDR [0] |

U04AS MAIN [702] CORTEZ DDR I/F (PE0288)

/FSCAS, /FSCS [0], /FSRAS, /FSWE, FSADDR [0-12], FSBKSEL [0-1], FSCKE, FSCLK+, FSCLK-, FSDATA [0-15], FSDQM [0-1], FSDQS [0-1]

702:1A:703:4A

[MDSD8M16]

IC701

| | | |
|---|---|---|
| FSADDR [0] | 29 | A0 |
| FSADDR [1] | 30 | A1 |
| FSADDR [2] | 31 | A2 |
| FSADDR [3] | 32 | A3 |
| FSADDR [4] | 35 | A4 |
| FSADDR [5] | 36 | A5 |
| FSADDR [6] | 37 | A6 |
| FSADDR [7] | 38 | A7 |
| FSADDR [8] | 39 | A8 |
| FSADDR [9] | 40 | A9 |
| FSADDR [10] | 28 | A10/AP |
| FSADDR [11] | 41 | A11 |
| FSBKSEL [1] | 27 | BS1 |
| FSBKSEL [0] | 26 | BS0 |
| FSCLK- | 46 | CLK |
| FSCLK+ | 45 | CLK |
| FSCKE | 44 | CKE |
| /FSCS [0] | 24 | CS |
| /FSRAS | 23 | RAS |
| /FSCAS | 22 | CAS |
| /FSWE | 21 | WE |
| FSDQM [0] | 20 | LDM |
| FSDQM [1] | 47 | UDM |
| FSDQS [0] | 16 | LDQS |
| FSDQS [1] | 51 | UDQS |
| FSADDR [12] | 14 | NC |
| | 17 | NC |
| | 19 | NC |
| | 25 | NC |
| | 42 | NC |
| | 43 | NC |
| | 50 | NC |
| | 53 | NC |
| | 3 | [VDDQ] |
| | 9 | [VDDQ] |
| | 15 | [VDDQ] |
| | 55 | [VDDQ] |
| | 61 | [VDDQ] |
| | 1 | [VDD] |
| | 18 | [VDD] |
| | 33 | [VDD] |
| | 49 | [VREF] |

R755 270 (F)

R756 100 (J) NOT MOUNT

| | | |
|---|---|---|
| DQ0 | 2 | FSDATA [0] |
| DQ1 | 4 | FSDATA [1] |
| DQ2 | 5 | FSDATA [2] |
| DQ3 | 7 | FSDATA [3] |
| DQ4 | 8 | FSDATA [4] |
| DQ5 | 10 | FSDATA [5] |
| DQ6 | 11 | FSDATA [6] |
| DQ7 | 13 | FSDATA [7] |
| DQ8 | 54 | FSDATA [8] |
| DQ9 | 56 | FSDATA [9] |
| DQ10 | 57 | FSDATA [10] |
| DQ11 | 59 | FSDATA [11] |
| DQ12 | 60 | FSDATA [12] |
| DQ13 | 62 | FSDATA [13] |
| DQ14 | 63 | FSDATA [14] |
| DQ15 | 65 | FSDATA [15] |
| [VSSQ] | 6 | |
| [VSSQ] | 12 | |
| [VSSQ] | 52 | |
| [VSSQ] | 58 | |
| [VSSQ] | 64 | |
| [VSS] | 34 | |
| [VSS] | 48 | |
| [VSS] | 66 | |

+2.5V_DDR

C788 10uF (K)
C785 10uF (K)
C786 10uF (K)
C774 100nF (K)
C775 100nF (K)
C776 100nF (K)
C777 100nF (K)
C778 100nF (K)
C779 100nF (K)
C780 10nF (K)
C784 10uF (K)

FSVREF

D_GND

/FSCAS, /FSCS [0], /FSRAS, /FSWE, FSADDR [0-12], FSBKSEL [0-1], FSCKE, FSCLK+, FSCLK-, FSDATA [0-15], FSDQM [0-1], FSDQS [0-1]

702:1A:703:1A

+2.5V_DDR

200 (J) R757

R760 NOT MOUNT

10K (F) R758

R759 10K (F)

FSVREF

C773 22uF (M) 6.3V

C7991 100nF (K)

C7992 100nF (K)

D_GND

+2.5V_DDR

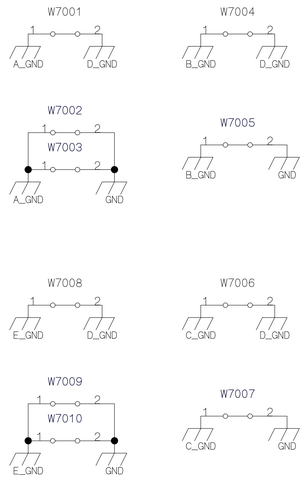
C781 100nF (K) MOUNT

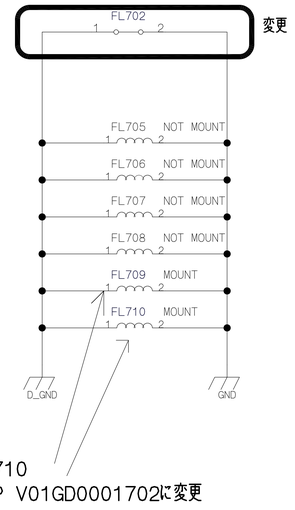
C782 100nF (K) NOT MOUNT

C783 100nF (K) MOUNT

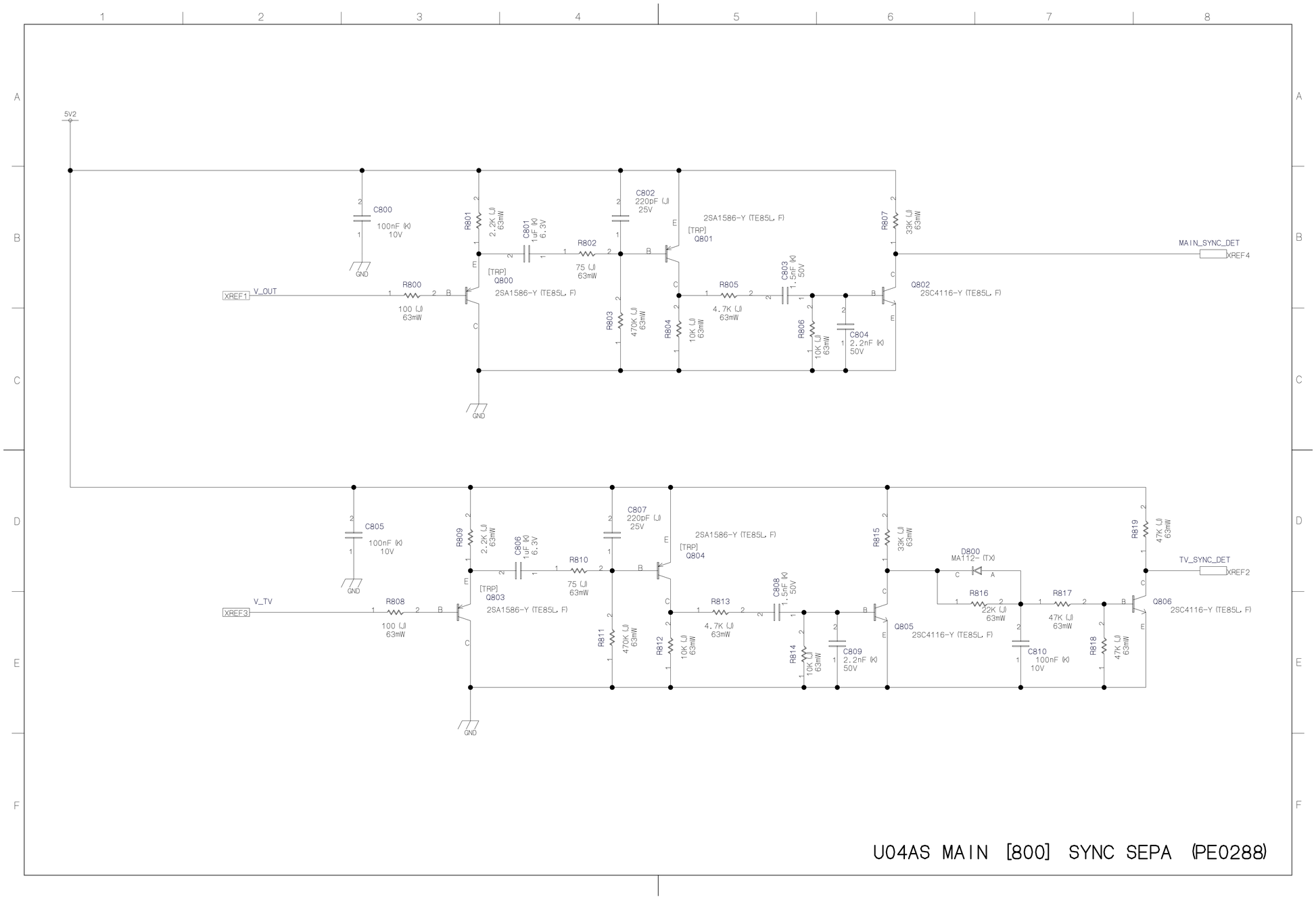
D_GND

# U04AS MAIN [703] DDR SDRAM (PE0288)

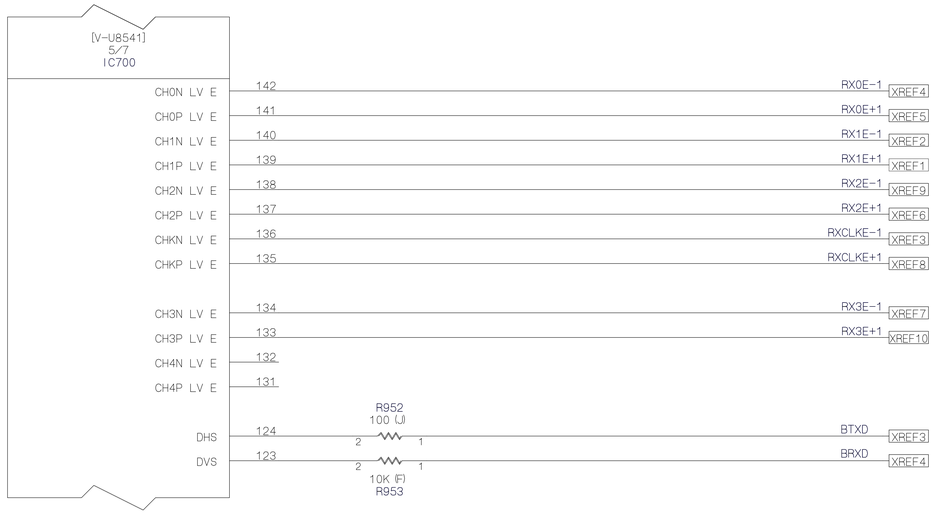


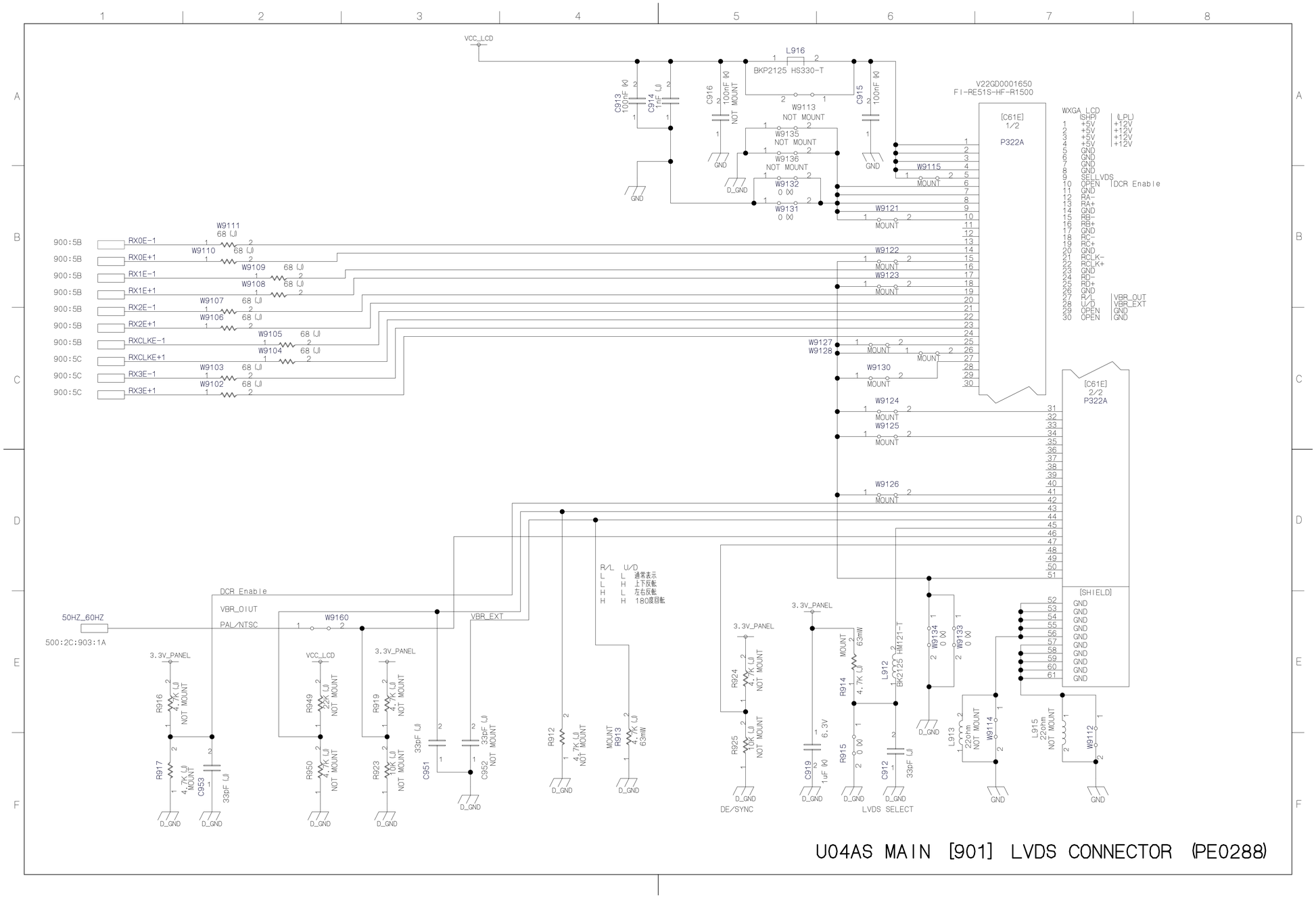

FL709, 710
chip-JP V01GD0001702に変更

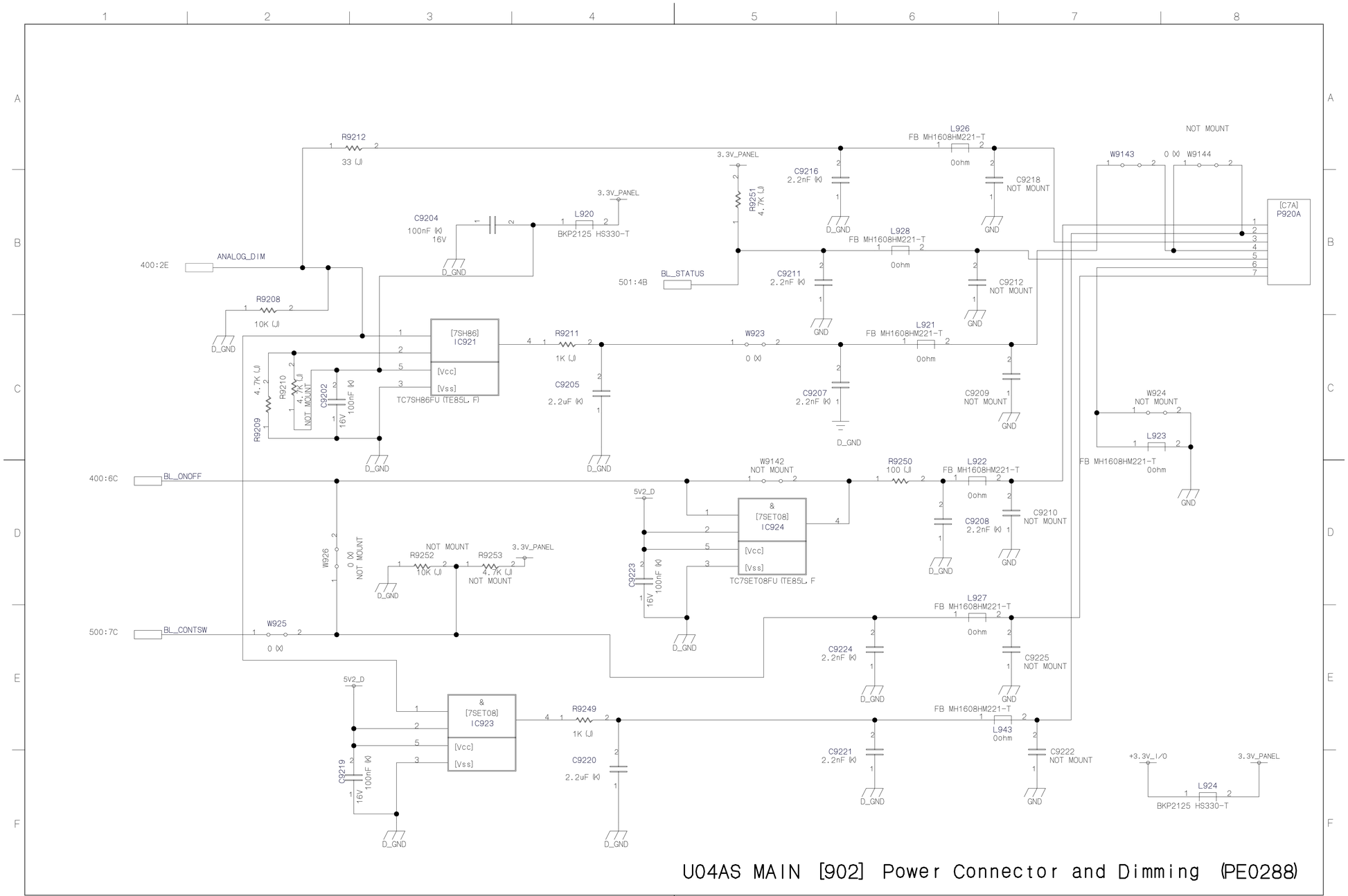



U04AS MAIN [800] SYNC SEPA (PE0288)

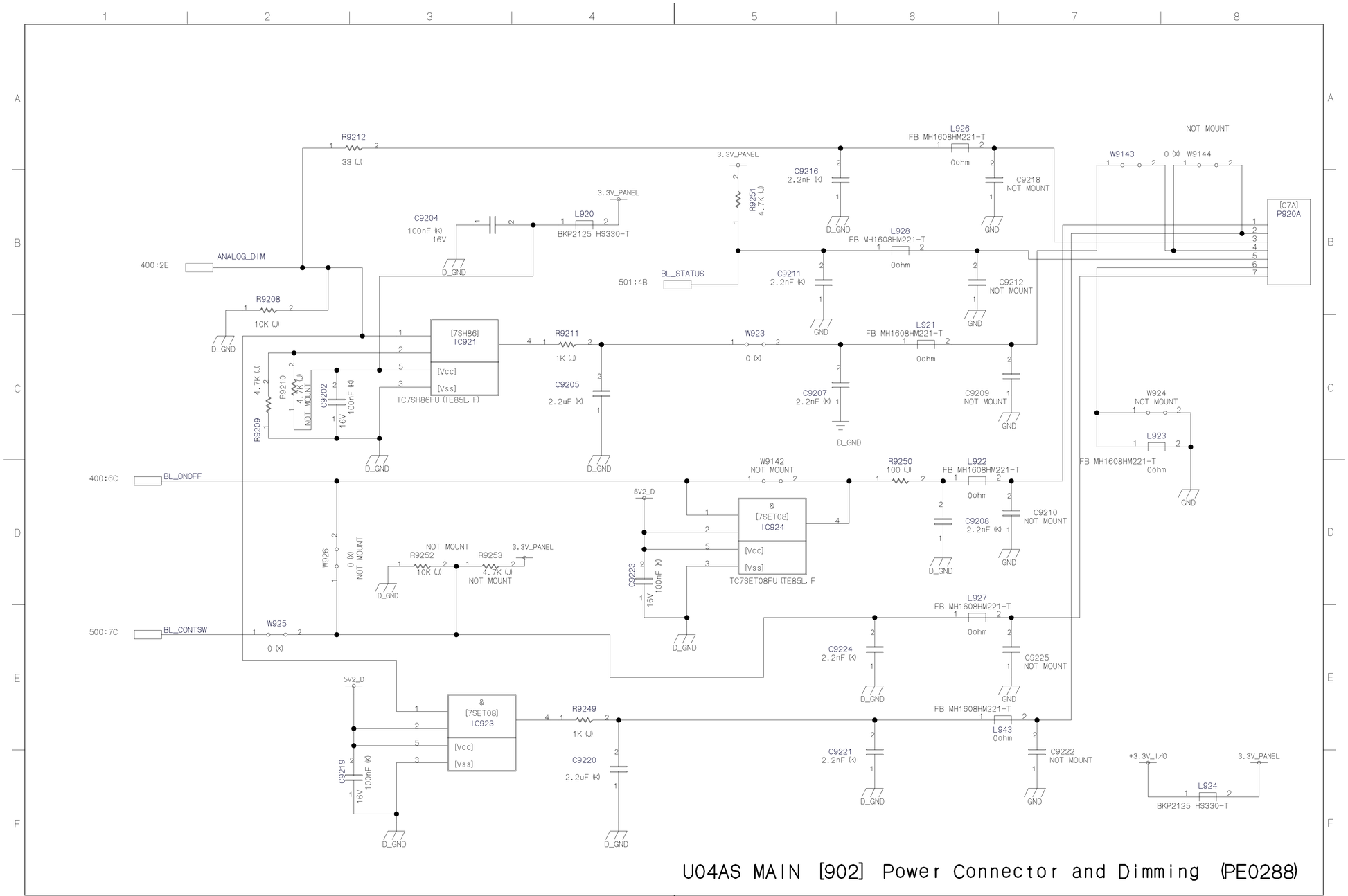



U04AS MAIN [900] CORTEZ LVDS_OUT (PE0288)

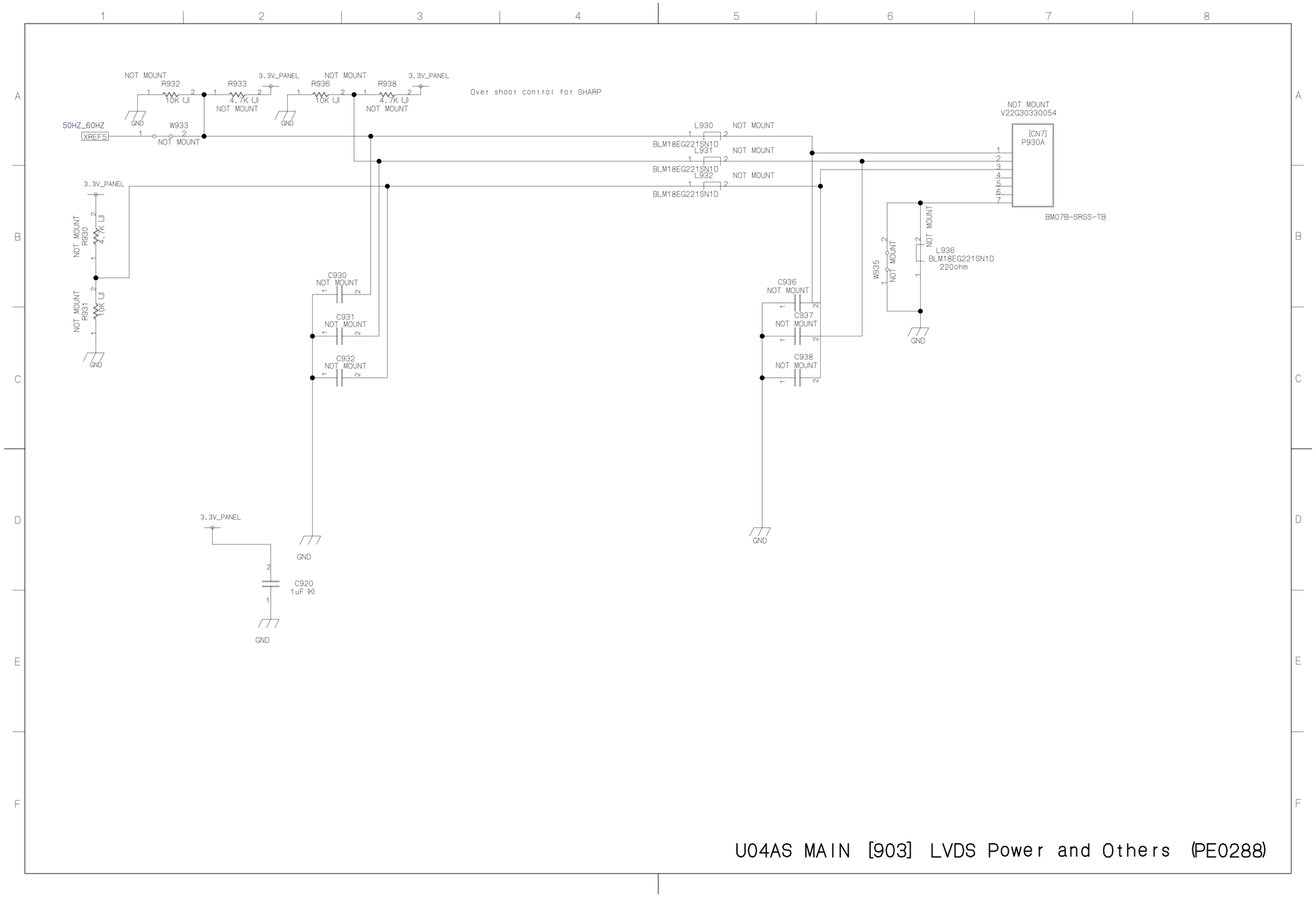

VCC_LCD
L916
BKP2125 HS330-T
C913 100nF (K)
C914 1nF (J)
C916 100nF (K) NOT MOUNT
C915 100nF (K)
W9113 NOT MOUNT
W9135 NOT MOUNT
W9136 NOT MOUNT
W9132 0 (X)
W9131 0 (X)
GND
D_GND
V22GD0001650
FI-RE51S-HF-R1500
[C61E] 1/2
P322A
WXGA LCD (SHR) (LPL)
1 +5V +12V
2 +5V +12V
3 +5V +12V
4 +5V +12V
5 GND
6 GND
7 GND
8 GND
9 SELLVDS
10 OPEN DCR Enable
11 GND
12 RA-
13 RA+
14 GND
15 RB-
16 RB+
17 GND
18 RC-
19 RC+
20 GND
21 RCLK-
22 RCLK+
23 GND
24 RD-
25 RD+
26 GND
27 R/L VBR_OUT
28 U/D VBR_EXT
29 OPEN GND
30 OPEN GND
W9115 MOUNT
W9121 MOUNT
W9122 MOUNT
W9123 MOUNT
W9127 MOUNT
W9128 MOUNT
W9130 MOUNT
W9124 MOUNT
W9125 MOUNT
W9126 MOUNT
[C61E] 2/2
P322A
[SHIELD]
W9111 68 (J)
W9110 68 (J)
W9109 68 (J)
W9108 68 (J)
W9107 68 (J)
W9106 68 (J)
W9105 68 (J)
W9104 68 (J)
W9103 68 (J)
W9102 68 (J)
900:5B RX0E-1
900:5B RX0E+1
900:5B RX1E-1
900:5B RX1E+1
900:5B RX2E-1
900:5B RX2E+1
900:5B RXCLKE-1
900:5C RXCLKE+1
900:5C RX3E-1
900:5C RX3E+1
DCR Enable
VBR_OUT
PAL/NTSC
50HZ_60HZ
500:2C:903:1A
W9160
VBR_EXT
R/L U/D
L 通常表示
L H 上下反転
H L 左右反転
H H 180度回転
3.3V_PANEL
R916 4.7K (J) NOT MOUNT
R917 4.7K (J) MOUNT
C953 33pF (J)
VCC_LCD
R949 4.7K (J) NOT MOUNT
R950 4.7K (J) NOT MOUNT
3.3V_PANEL
R919 4.7K (J) NOT MOUNT
R923 4.7K (J) NOT MOUNT
C951 33pF (J)
C952 33pF (J) NOT MOUNT
R912 4.7K (J) NOT MOUNT
MOUNT R913 4.7K (J) 63mW
3.3V_PANEL
R924 4.7K (J) NOT MOUNT
R925 4.7K (J) NOT MOUNT
DE/SYNC
3.3V_PANEL
C919 1uF (K) 6.3V
MOUNT R914 4.7K (J) 63mW
R915 0 (X)
L912 BK2125 HM121-T
C912 33pF (J)
LVDS SELECT
W9134 0 (X)
W9133 0 (X)
L913 22ohm NOT MOUNT
W9114
L915 22ohm NOT MOUNT
W9112
U04AS MAIN [901] LVDS CONNECTOR (PE0288)



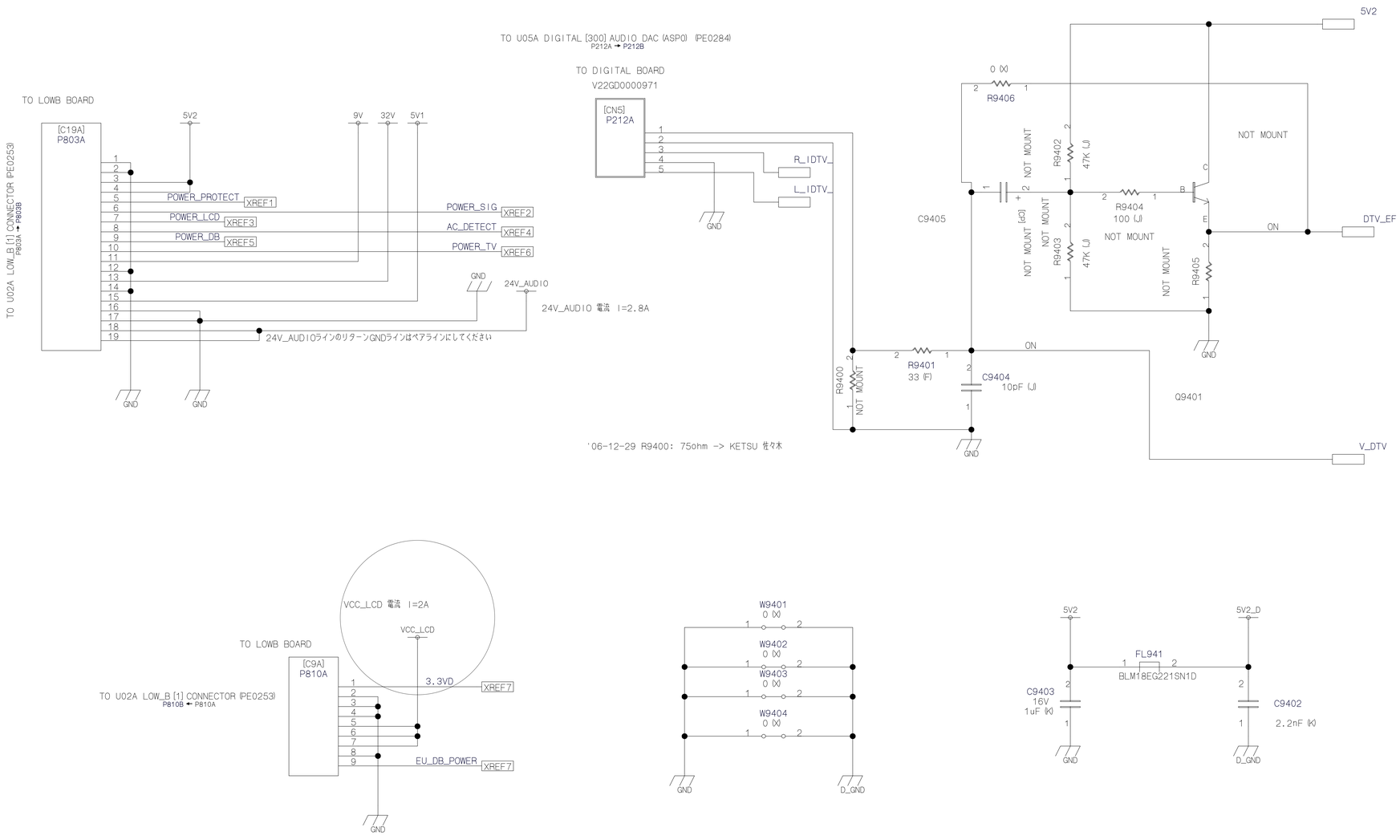

U04AS MAIN [902] Power Connector and Dimming (PE0288)



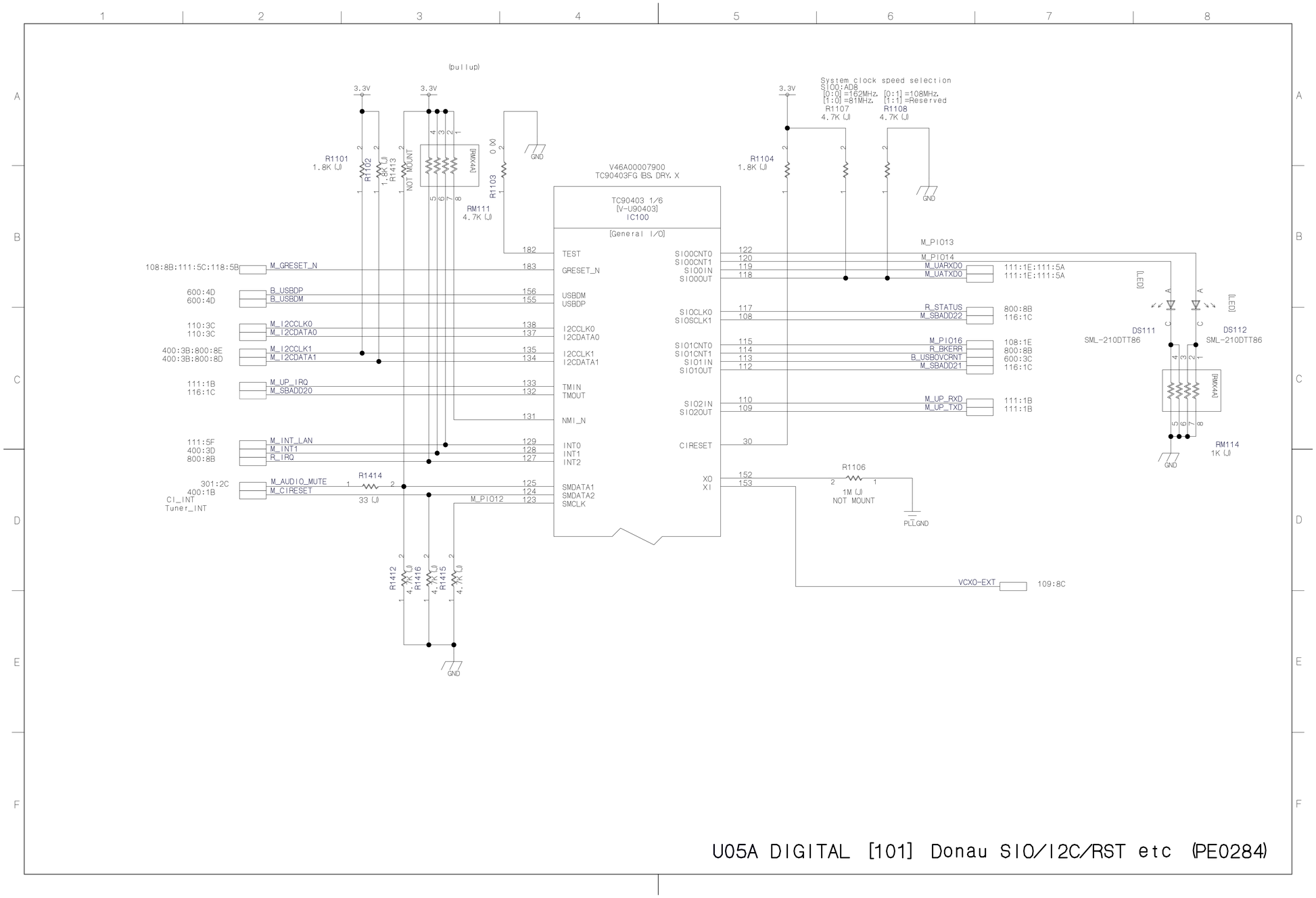

U04AS MAIN [902] Power Connector and Dimming (PE0288)



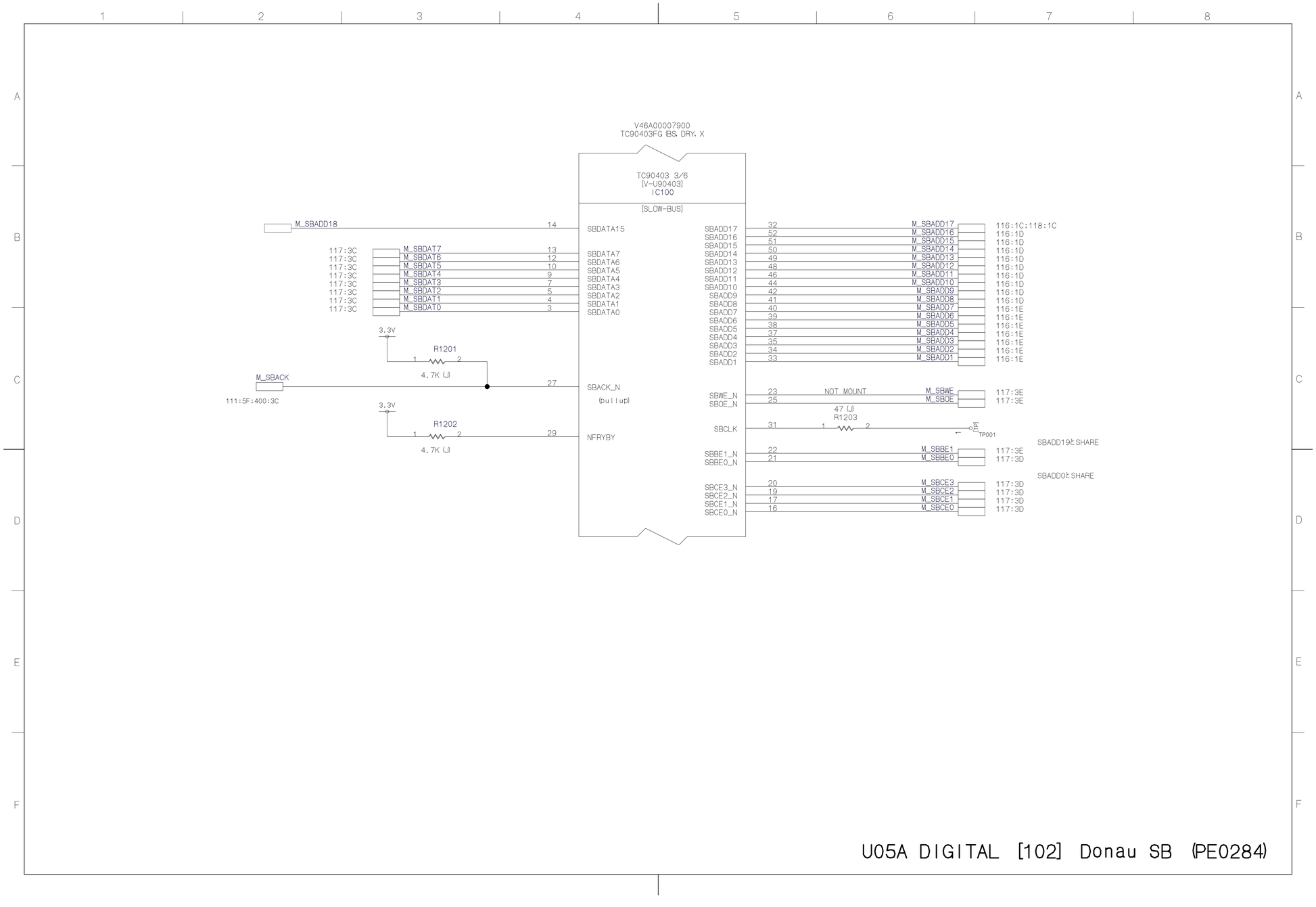

U04AS MAIN [903] LVDS Power and Others (PE0288)



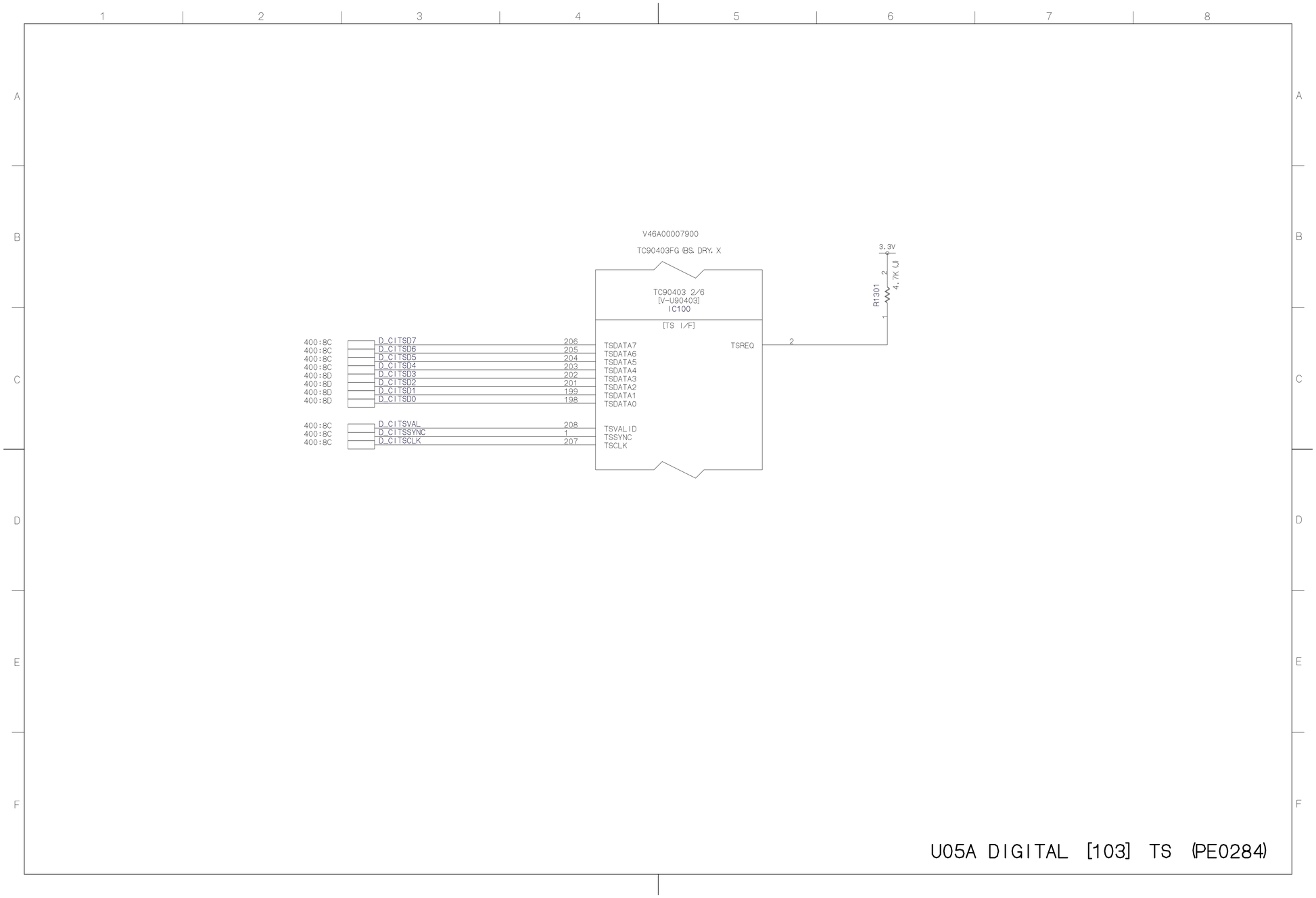

# U04AS MAIN [904] SIGNAL/LOWB B-B (PE0288)



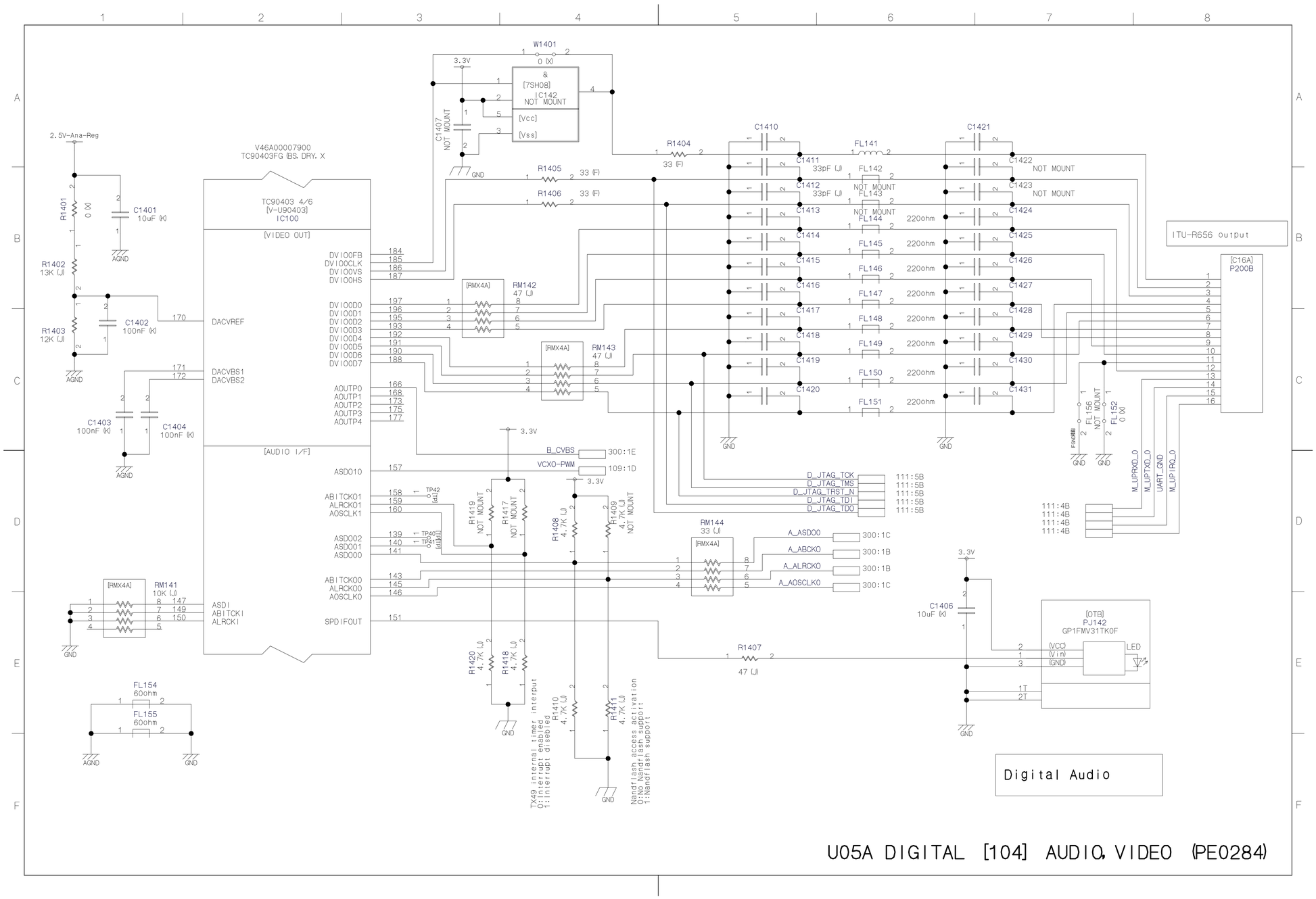

U05A DIGITAL [101] Donau SIO/I2C/RST etc (PE0284)




U05A DIGITAL [102] Donau SB (PE0284)




U05A DIGITAL [103] TS (PE0284)




U05A DIGITAL [104] AUDIO, VIDEO (PE0284)

V46A00007900
TC90403FG (BS, DRY, X

TC90403 5/6
[V-U90403]
IC100

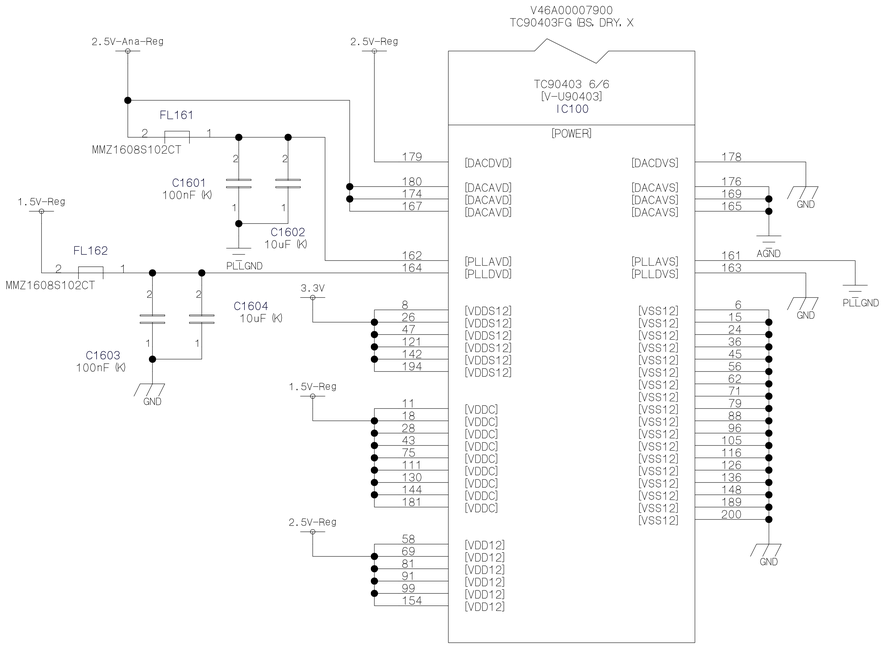
[DDR I/F]

| | | | | | |
|---|---|---|---|---|---|
| 114:1B | M_DDRDQ0 | 63 | SDMD0 | | |
| 114:1B | M_DDRDQ1 | 61 | SDMD1 | | |
| 114:1B | M_DDRDQ2 | 60 | SDMD2 | | |
| 114:1B | M_DDRDQ3 | 59 | SDMD3 | | |
| 114:1B | M_DDRDQ4 | 57 | SDMD4 | | |
| 114:1B | M_DDRDQ5 | 55 | SDMD5 | | |
| 114:1B | M_DDRDQ6 | 54 | SDMD6 | | |
| 114:1B | M_DDRDQ7 | 53 | SDMD7 | | |
| 114:1B | M_DDRDQ8 | 104 | SDMD8 | | |
| 114:1B | M_DDRDQ9 | 103 | SDMD9 | | |
| 114:1B | M_DDRDQ10 | 102 | SDMD10 | | |
| 114:1B | M_DDRDQ11 | 101 | SDMD11 | | |
| 114:1B | M_DDRDQ12 | 100 | SDMD12 | | |
| 114:1B | M_DDRDQ13 | 98 | SDMD13 | | |
| 114:1B | M_DDRDQ14 | 97 | SDMD14 | | |
| 114:1B | M_DDRDQ15 | 95 | SDMD15 | | |
| 112:2E:115:6C | M_DDRVREF | 106 | SDVREF | | |
| | | 64 | SDDQS0 | M_DDRDQS0 | 113:1D |
| | | 94 | SDDQS1 | M_DDRDQS1 | 113:1D |
| | | 65 | SDDM0 | M_DDRDM0 | 113:1D |
| | | 93 | SDDM1 | M_DDRDM1 | 113:1D |
| | | 74 | SDADD0 | M_DDRAD0 | 113:1B |
| | | 76 | SDADD1 | M_DDRAD1 | 113:1B |
| | | 77 | SDADD2 | M_DDRAD2 | 113:1B |
| | | 78 | SDADD3 | M_DDRAD3 | 113:1B |
| | | 80 | SDADD4 | M_DDRAD4 | 113:1B |
| | | 82 | SDADD5 | M_DDRAD5 | 113:1B |
| | | 83 | SDADD6 | M_DDRAD6 | 113:1B |
| | | 84 | SDADD7 | M_DDRAD7 | 113:1B |
| | | 85 | SDADD8 | M_DDRAD8 | 113:1B |
| | | 86 | SDADD9 | M_DDRAD9 | 113:1B |
| | | 73 | SDADD10 | M_DDRAD10 | 113:1B |
| | | 87 | SDADD11 | M_DDRAD11 | 113:1B |
| | | 89 | SDADD12 | M_DDRAD12 | 113:1B |
| | | 90 | SDCLK | | |
| | | 92 | SDBCLK | | |
| | | 107 | SDCKE | M_DDRCKE | 113:1D |
| | | 70 | SDBA0 | M_DDRBA0 | 113:1D |
| | | 72 | SDBA1 | M_DDRBA1 | 113:1D |
| | | 66 | SDWE_N | M_DDRWE | 113:1D |
| | | 68 | SDRAS_N | M_DDRRAS | 113:1D |
| | | 67 | SDCAS_N | M_DDRCAS | 113:1D |

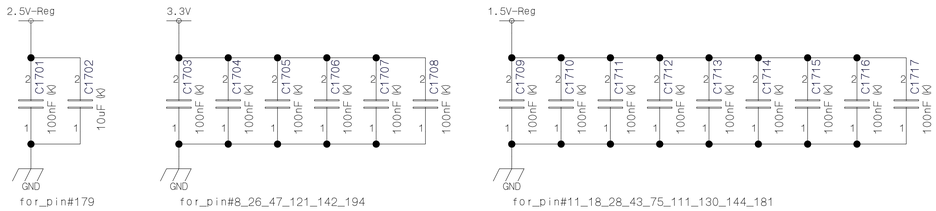
C1501
5pF (C)
1
2
NOT MOUNT

M_DDRCLK0 113:1D
M_DDRCLKB0 113:1D

U05A DIGITAL [105] DDRSDRAM I/F (PE0284)



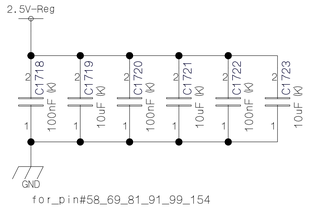

U05A DIGITAL [106] Donau PWR1 (PE0284)

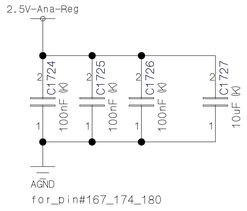




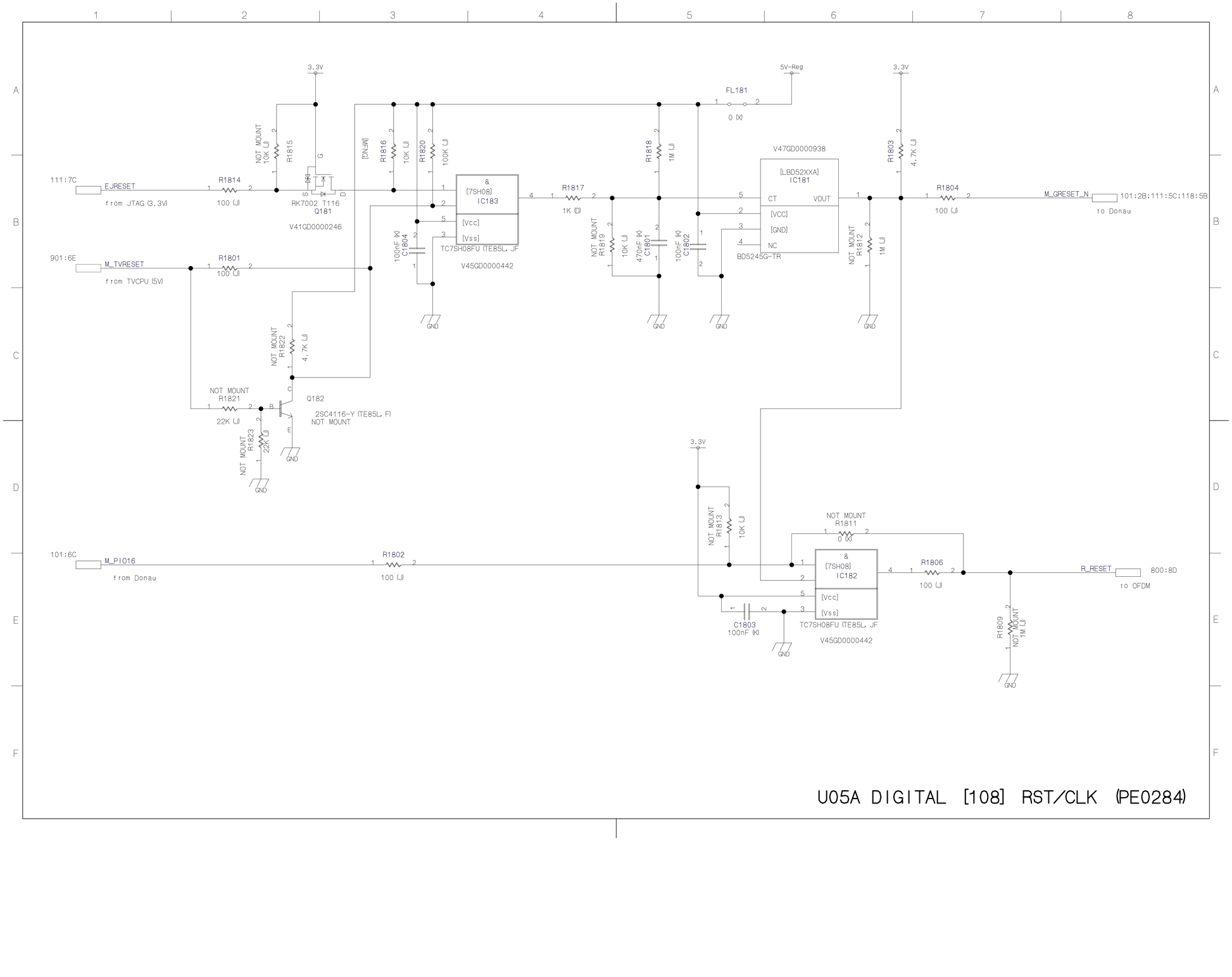




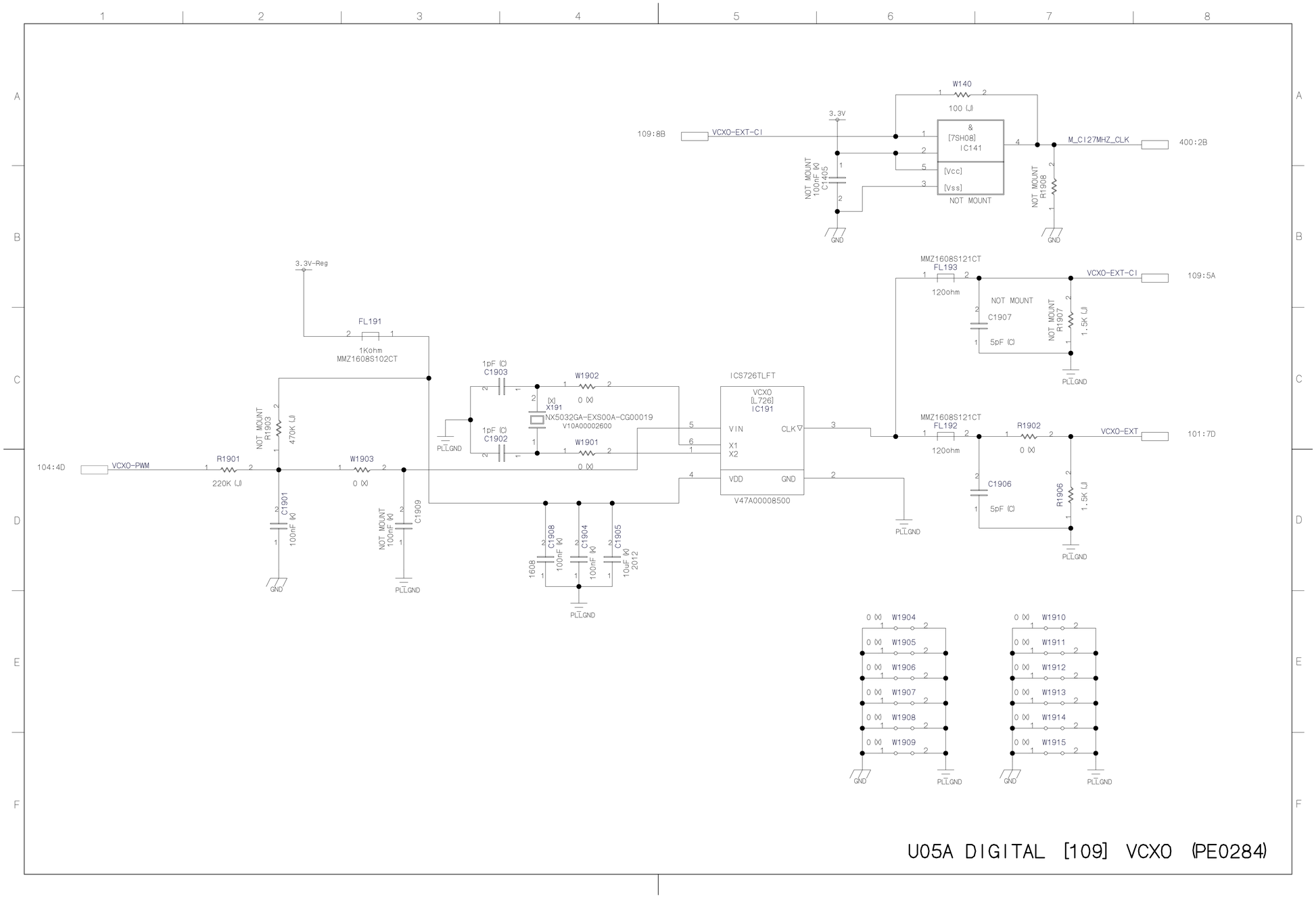



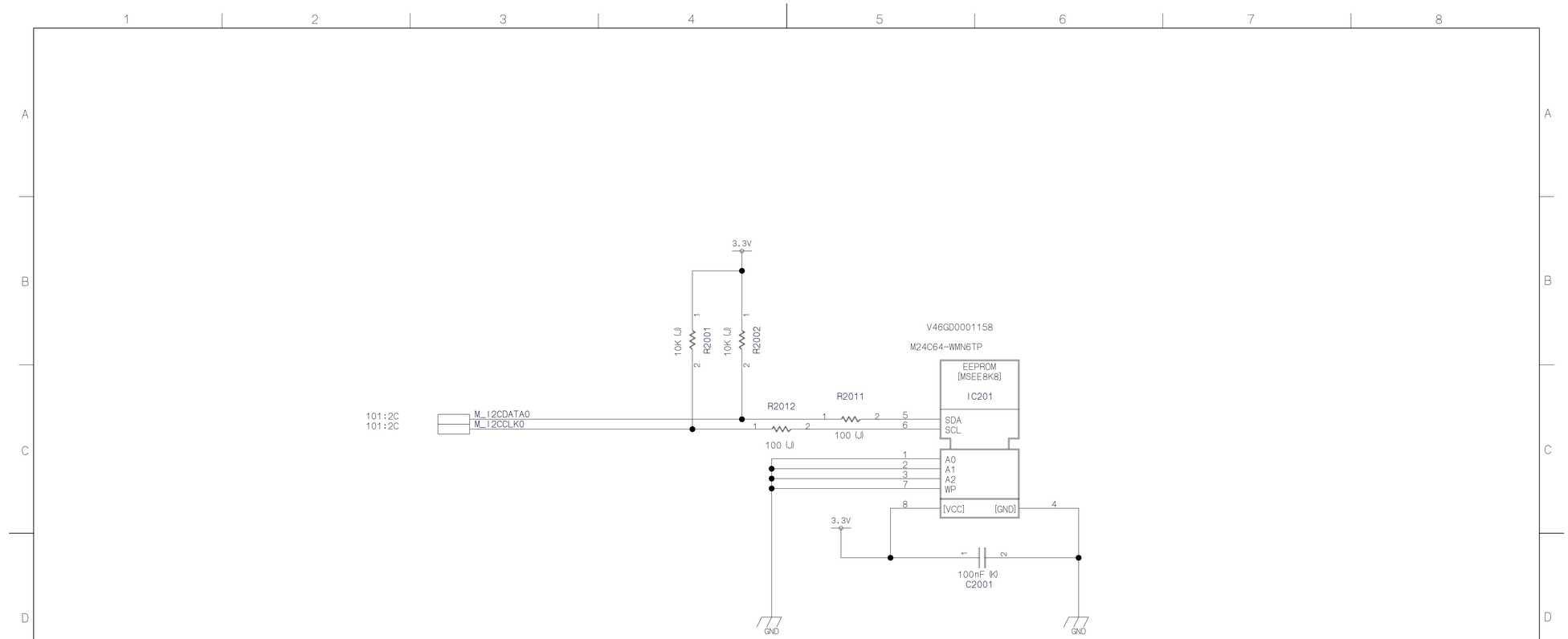

U05A DIGITAL [107] Donau PATHCON (PE0284)




U05A DIGITAL [108] RST/CLK (PE0284)




U05A DIGITAL [109] VCXO (PE0284)




U05A DIGITAL [110] E2PROM (PE0284)

## Internal Communication port with TV side

3.3V
R2101 4.7K (J)
R2102 NOT MOUNT
R2103 4.7K (J)
C2101 220pF (J)
GND
101:6C M_UP_RXD R2105 FL211 600ohm
101:6C M_UP_TXD R2106 FL212 600ohm
101:2C M_UP_IRQ FL213 0 (X)
GND
R2107 FL214 600ohm
R2104 NOT MOUNT
C2102 220pF (J)
GND
GND
M_UPRXD_0
M_UPTXD_0
UART_GND
M_UPIRQ_0
104:7D
104:7D
104:7D
104:7D

3.3V
3.3V
[DMC] D2100 1SS302 (TE85R, F)
GND MOUNT
R2112 4.7K (J)
FL215 600ohm
V22A00020900 S4B-EH (LF) (SN)
[CN4] PJ212
101:6B:111:5A M_UATXD0
M_UARXD0
R2109
R2110
101:6B:111:5A
Serial port for debug
<DEBUG>
1:GND
2:Donau TXD
3:Donau RXD
4:5V
GND
3.3V
[DMC] D2101 1SS302 (TE85R, F)
GND MOUNT

101:6B:111:1E M_UATXD0
101:6B:111:1E M_UARXD0
NOT MOUNT
NOT MOUNT
R2111
104:6D D_JTAG_TCK
[RMX4A] RM211
104:6D D_JTAG_TMS
104:6D D_JTAG_TRST_N
104:6D D_JTAG_TDI
104:6D D_JTAG_TDO
0 (X)
104:6D
116:7E M_DEBUG_ON
101:2B:108:8B:118:5B M_GRESET_N
117:6D M_CE3
108:1B EJRESET
TP002
TP003

117:6C:118:5B:405:2C M_SBD0
117:6C:118:5B:405:2D M_SBD1
117:6C:118:5B:405:2D M_SBD2
117:6C:118:5B:405:2D M_SBD3
117:6C:118:5B:405:2D M_SBD4
117:6C:118:5B:405:2D M_SBD5
117:6C:118:5B:405:2D M_SBD6
117:6C:118:5B:405:2D M_SBD7

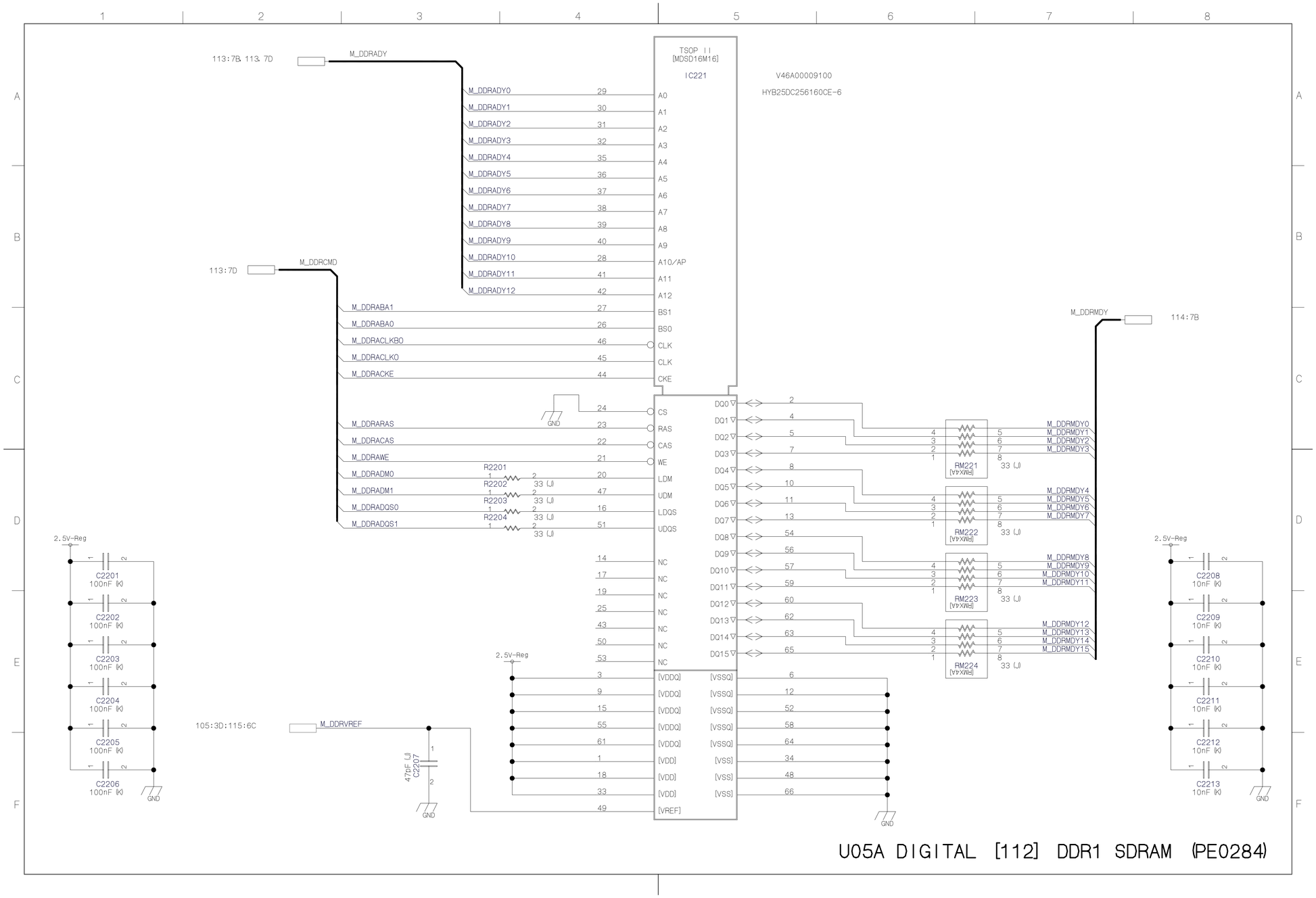
117:6E:118:5B:400:3C M_WE
117:6E:118:5B:400:3C M_OE
SBADDのとSHARE 117:6D M_CE1
117:6D:118:5C:404:3B M_BE0

116:7E:118:5C:404:3B M_SBA1
116:7E:118:5C:404:3B M_SBA2
116:7E:118:5C:404:3B M_SBA3
116:7E:118:5C:404:3B M_SBA4
116:7E:118:5C:404:3B M_SBA5
116:7E:118:5C:404:3B M_SBA6
116:7E:118:5C:404:3B M_SBA7
116:7D:118:1B:118:5C:404:3C M_SBA8
116:7D:118:1B:118:5C:404:3C M_SBA9
116:7D:118:1B:118:5C:404:3C M_SBA10
116:7D:118:1B:118:5C:404:3C M_SBA11
116:7D:118:1B:118:5C:404:3C M_SBA12
116:7D:118:1B:118:5D:404:3C M_SBA13
116:7D:118:1B:118:5D:404:3C M_SBA14
116:7D:118:1B:118:5D:400:3C M_SBA15

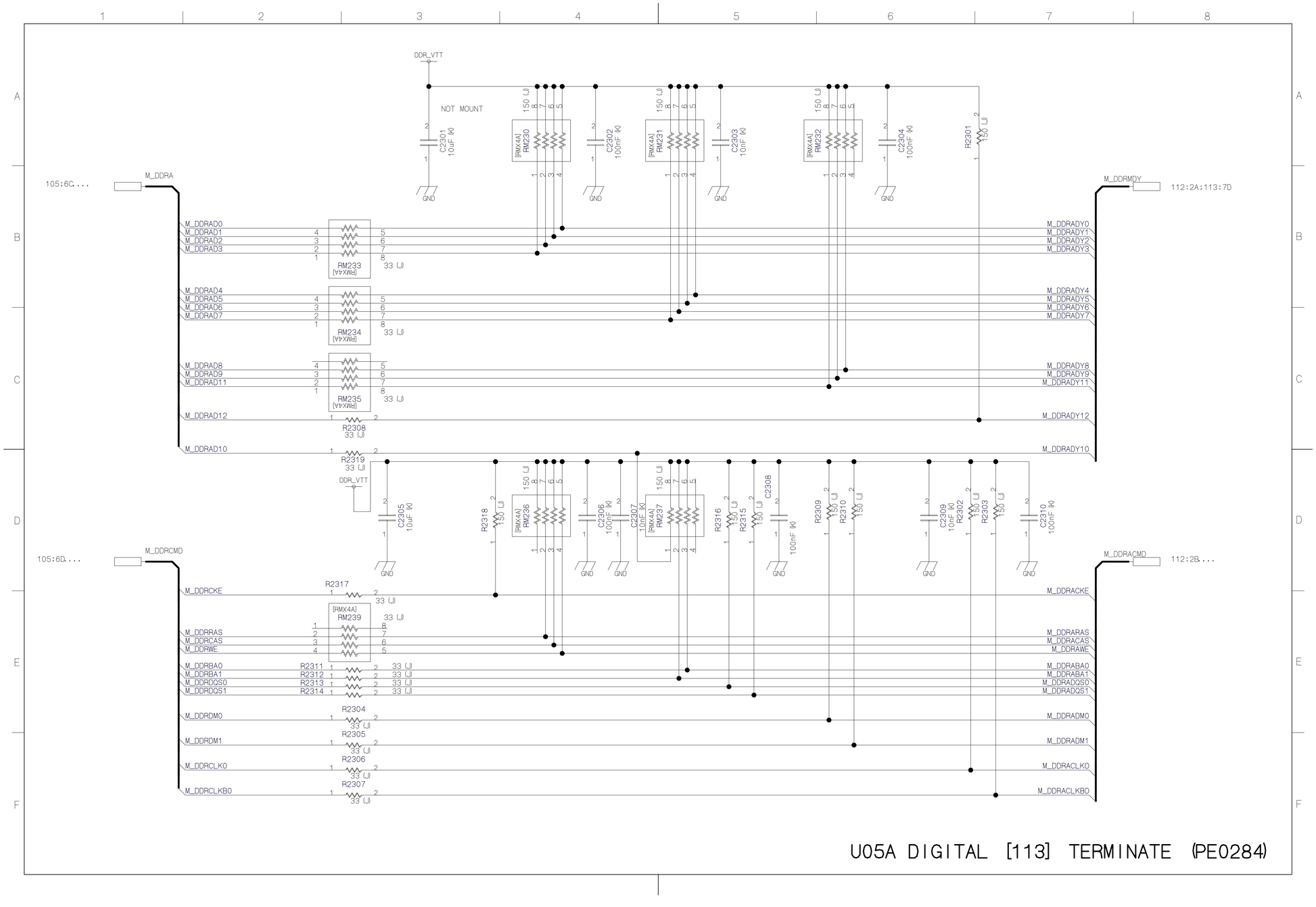
102:2C:400:3C M_SBACK
101:2C M_INT_LAN

3.3V
NOT MOUNT FL217 60ohm
DEBUG SIO / JTAG CONNECTOR DEBUG BOARD
[TP] TP101 … [TP] TP150
GND

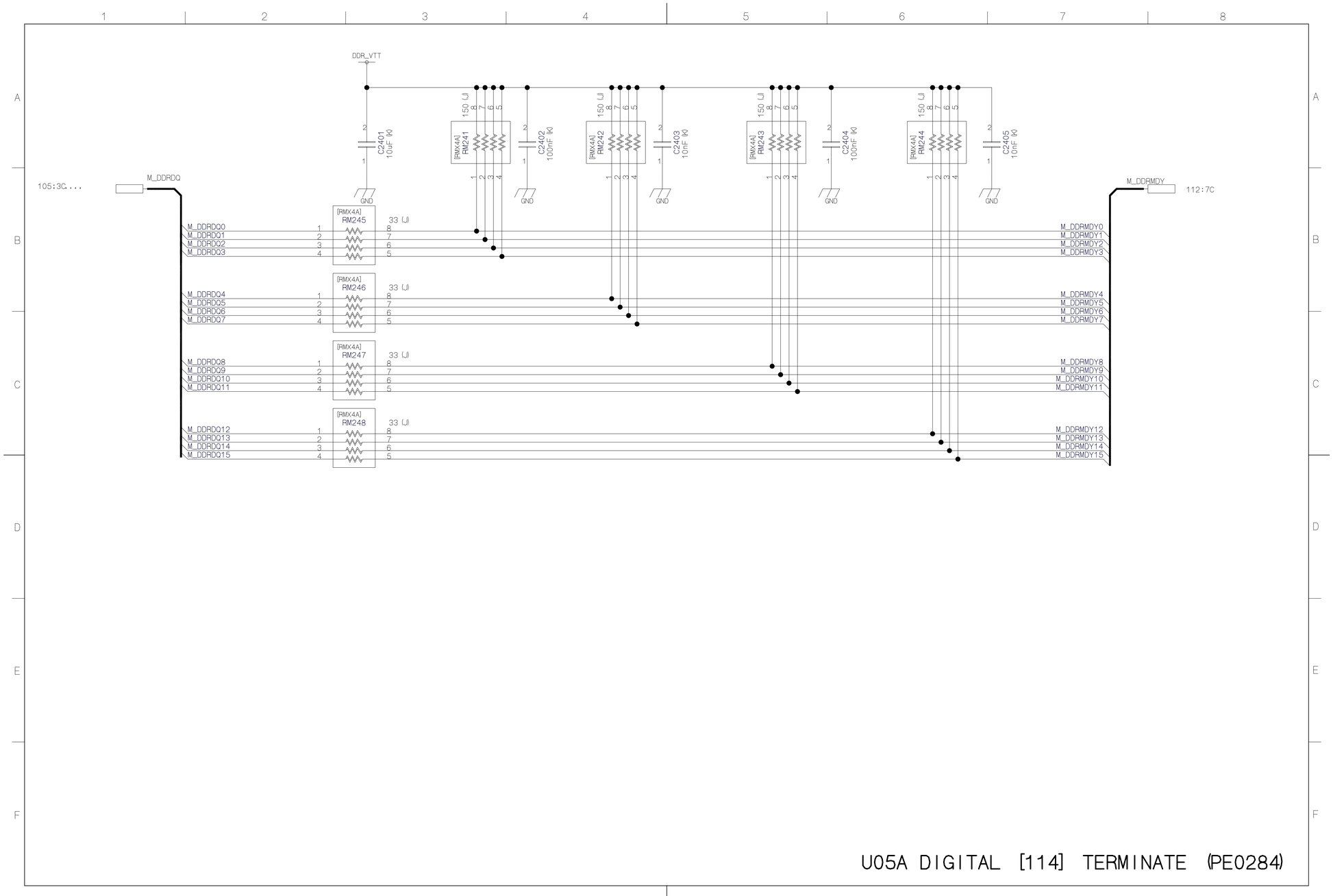
# U05A DIGITAL [111] SERIAL/EJTAG (PE0284)



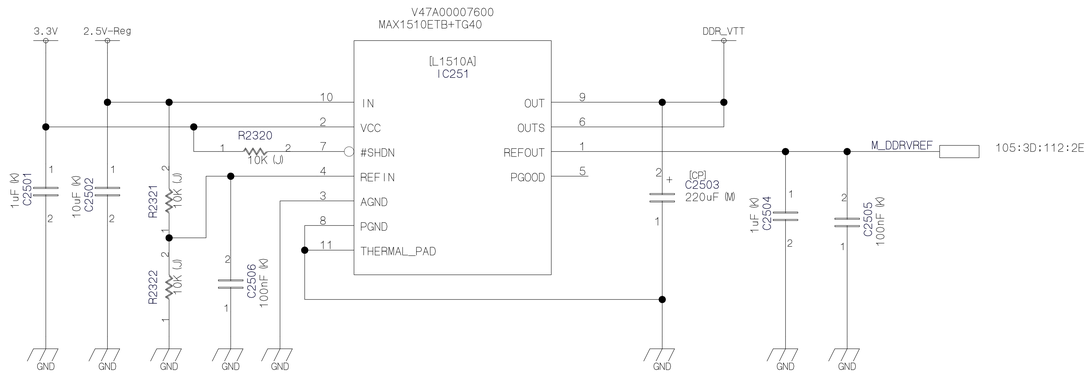

U05A DIGITAL [112] DDR1 SDRAM (PE0284)



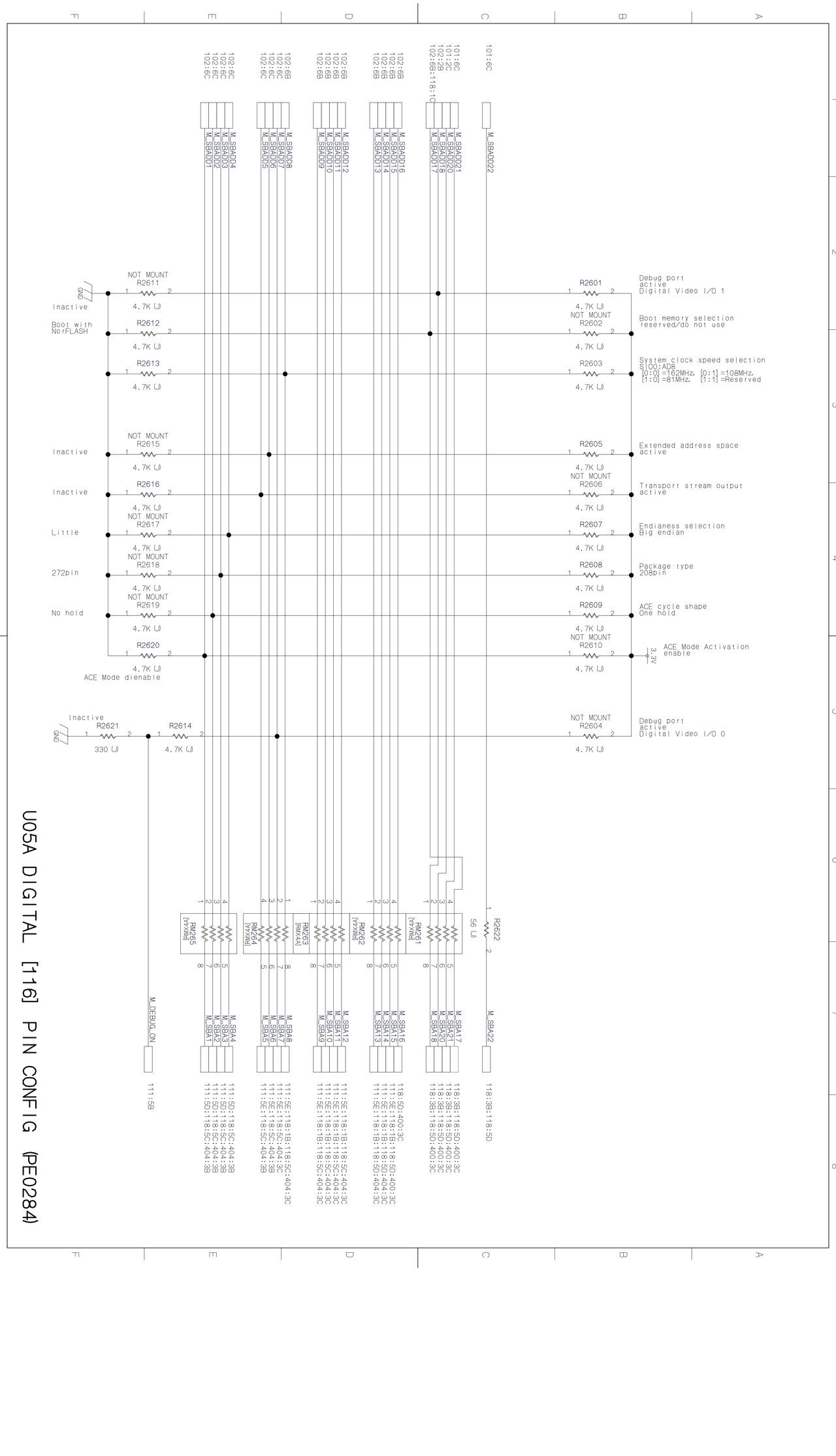

U05A DIGITAL [113] TERMINATE (PE0284)



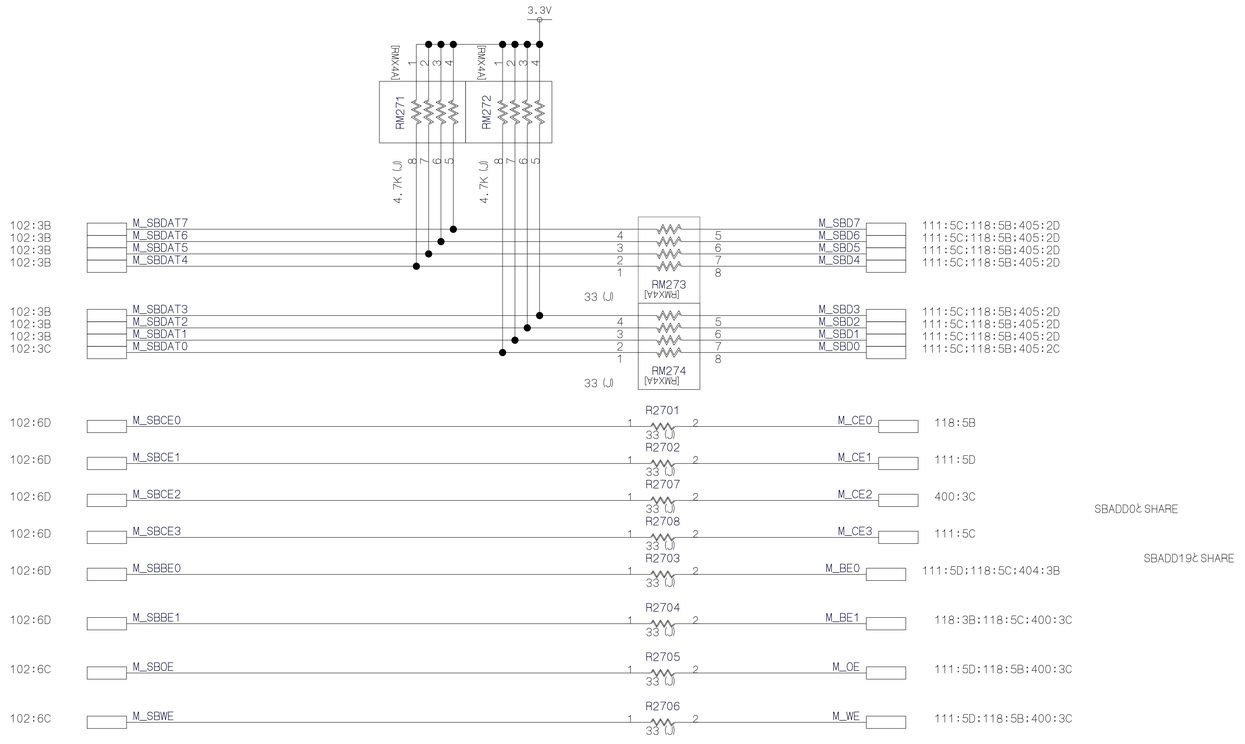

U05A DIGITAL [114] TERMINATE (PE0284)



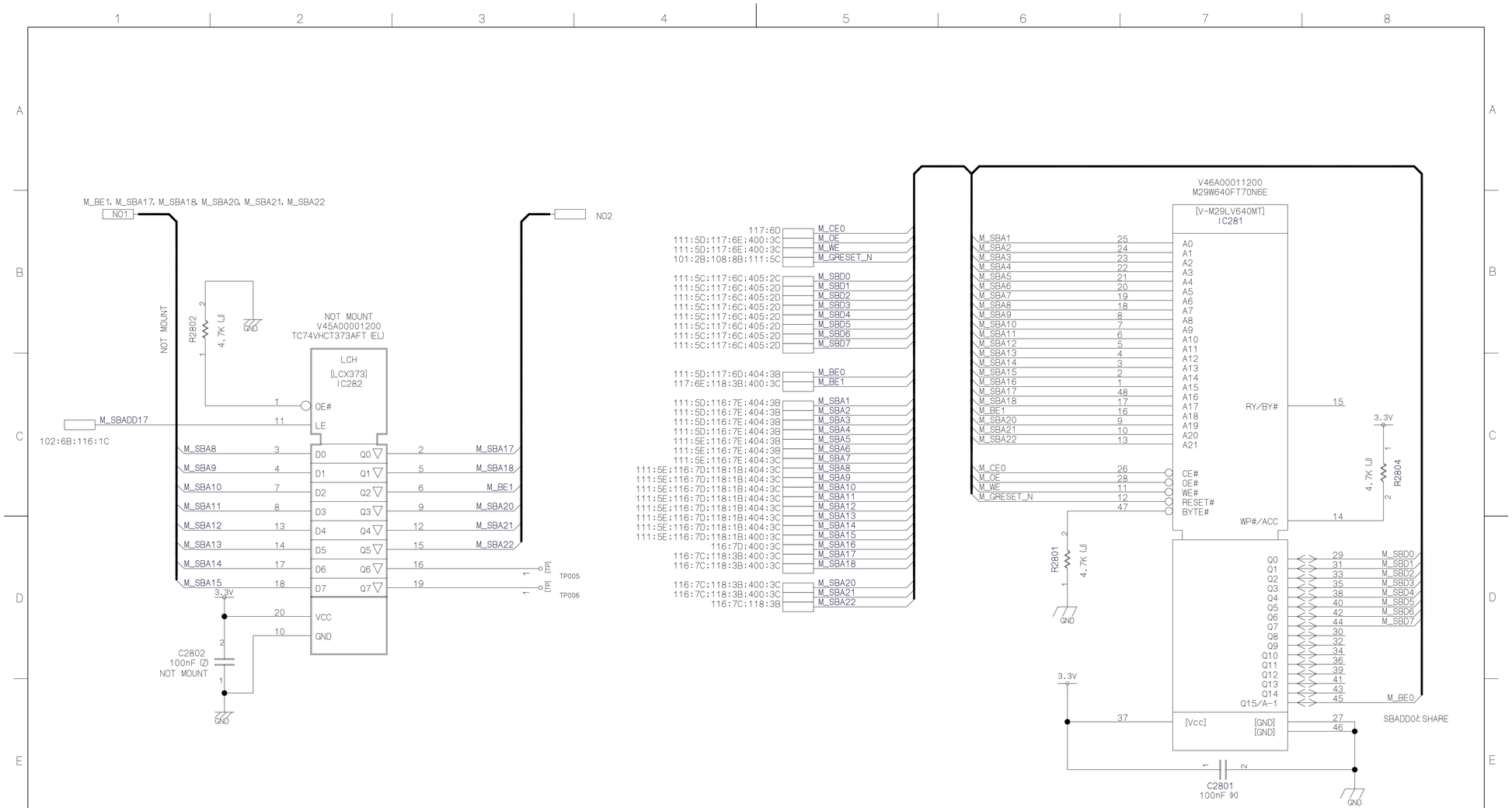

U05A DIGITAL [115] TERMINATE (PE0284)



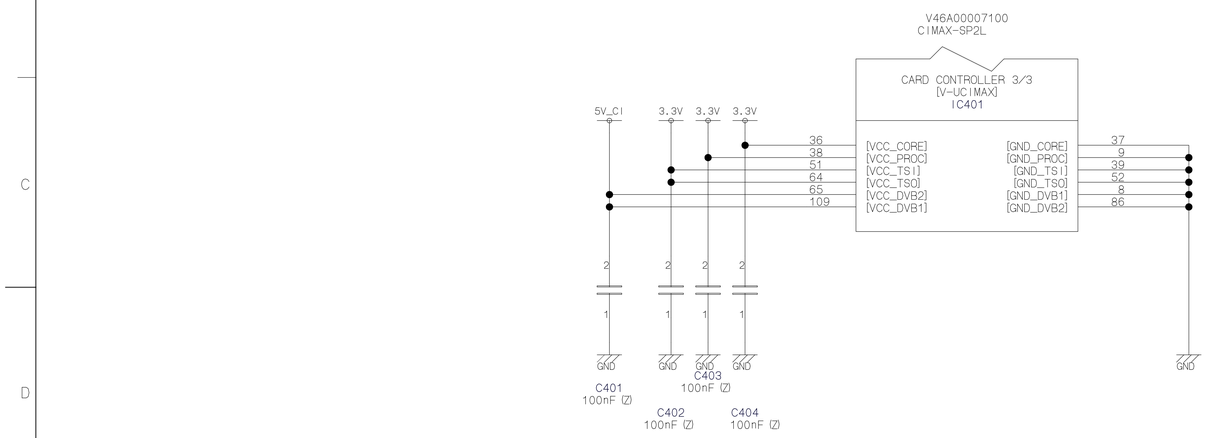

# U05A DIGITAL [116] PIN CONFIG (PE0284)



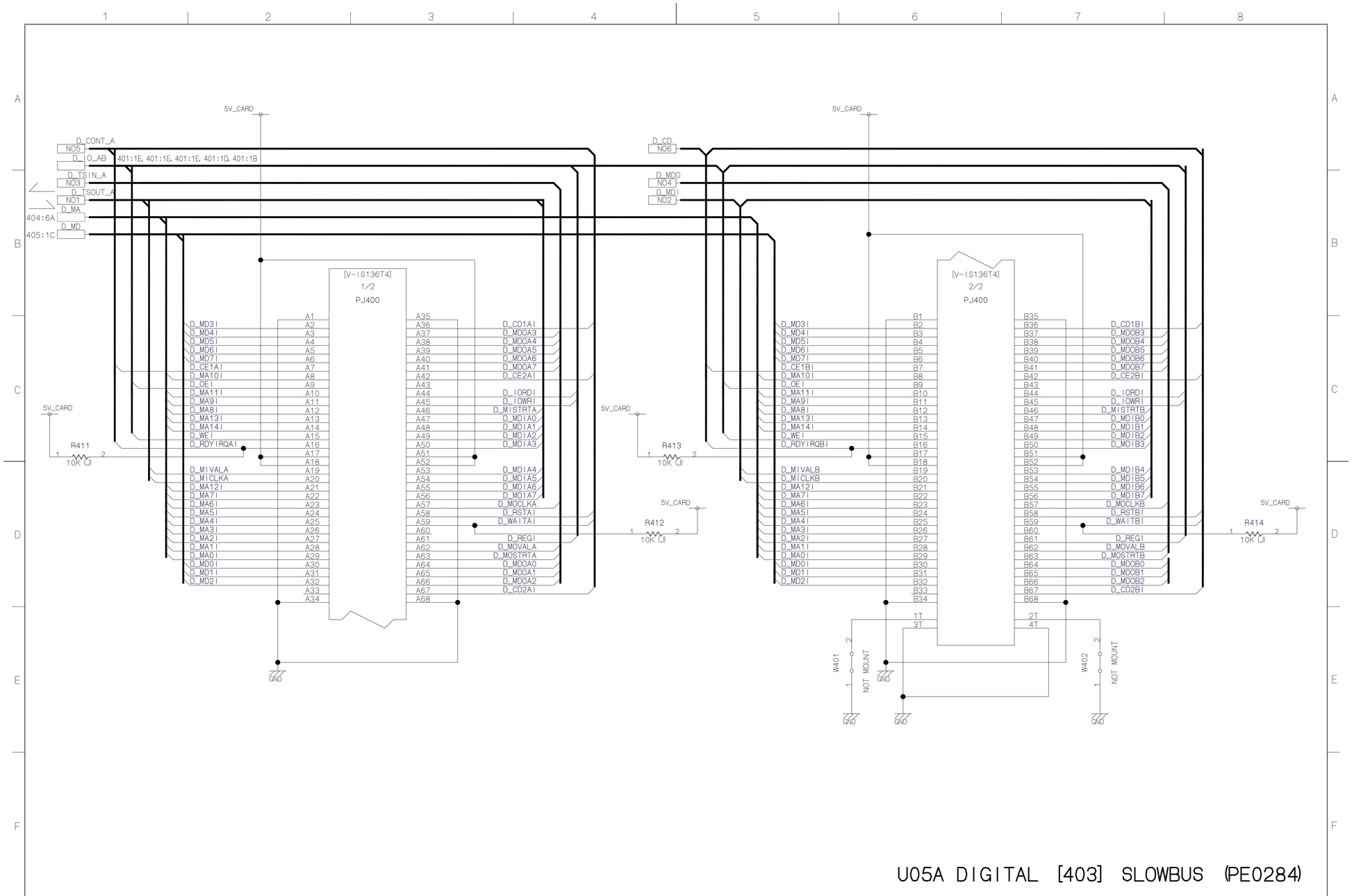

# U05A DIGITAL [117] SBD REGISTER (PE0284)

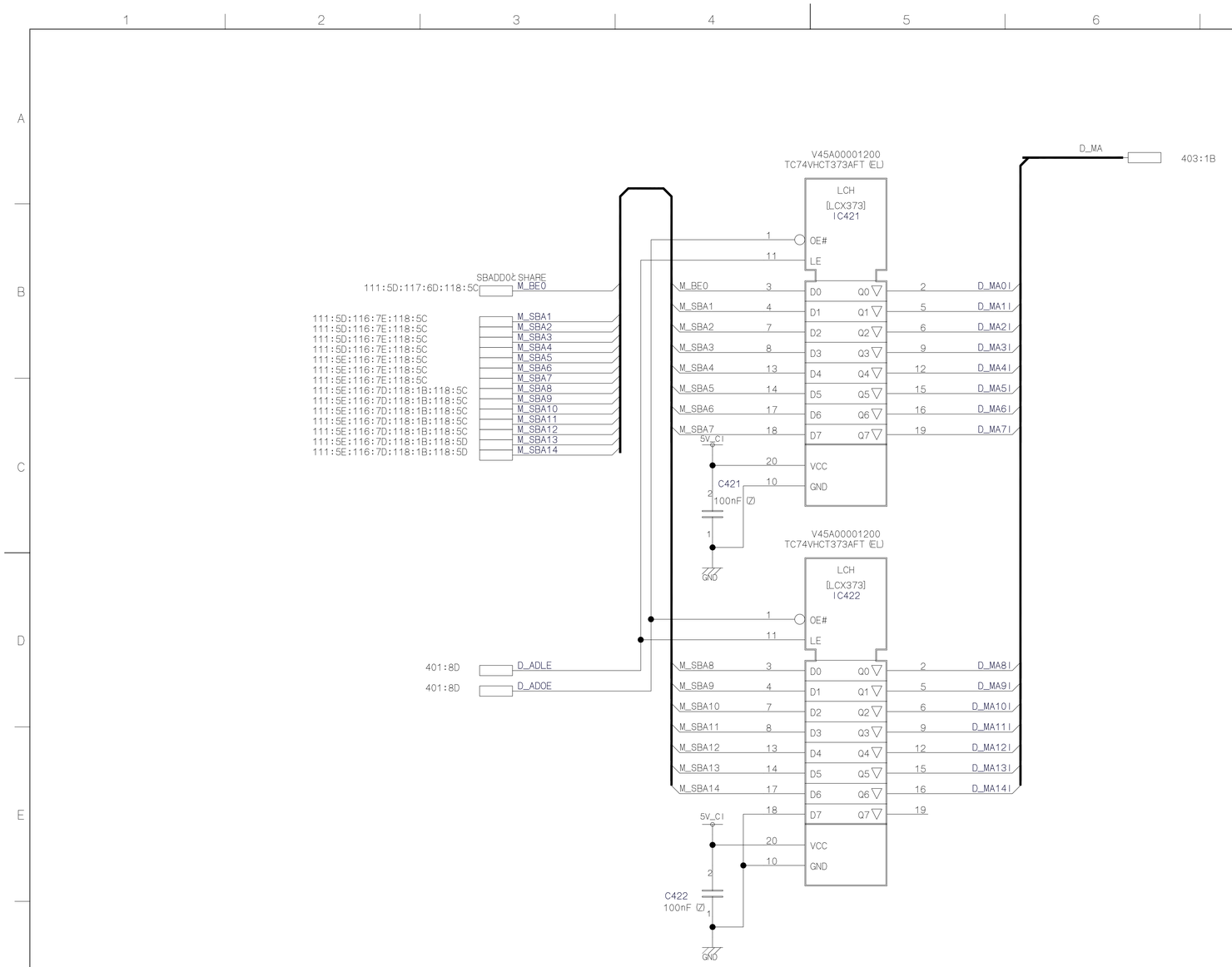



U05A DIGITAL [118] NOR FLASH (PE0284)

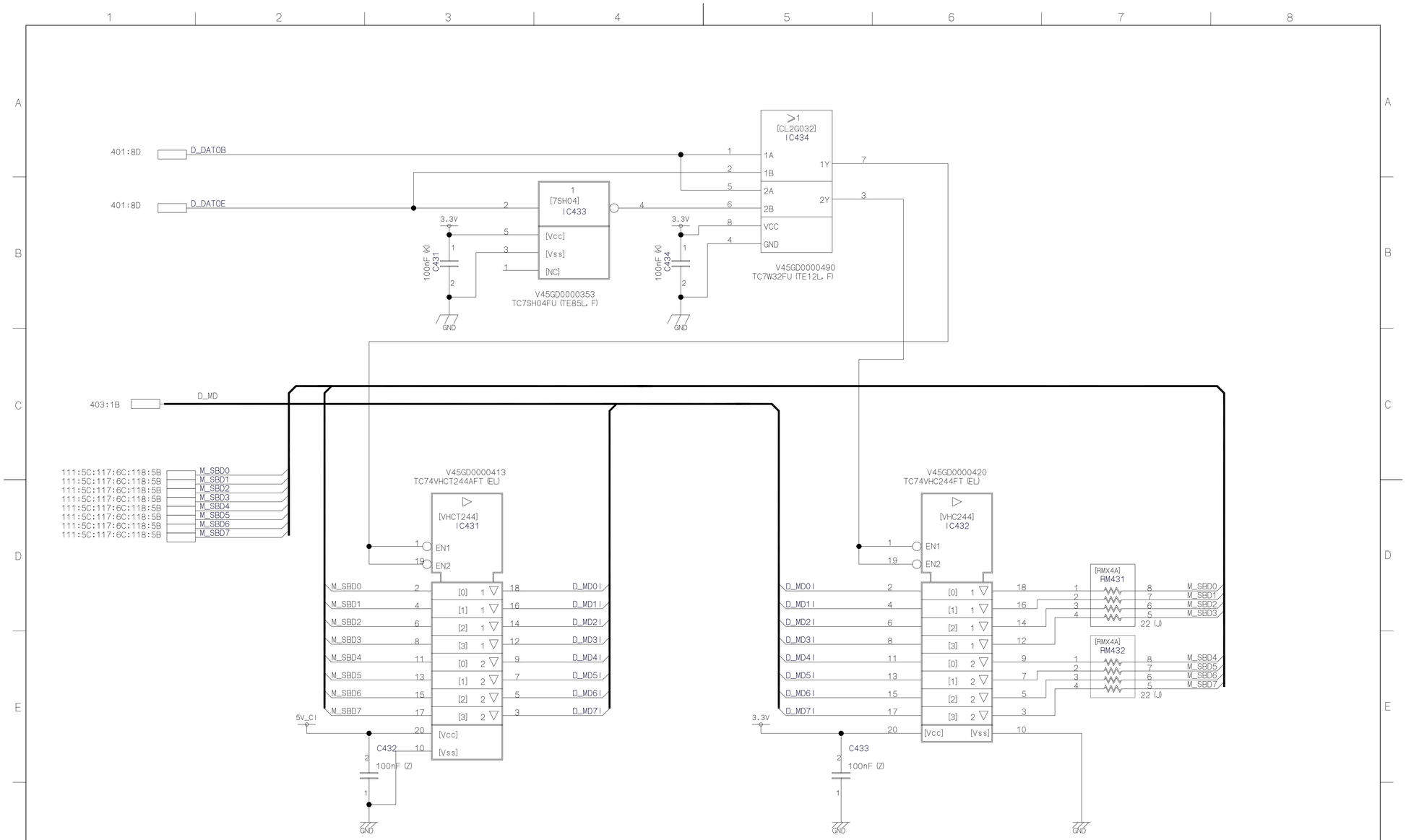



U05A DIGITAL [402] CPLD XILINX (PE0284)

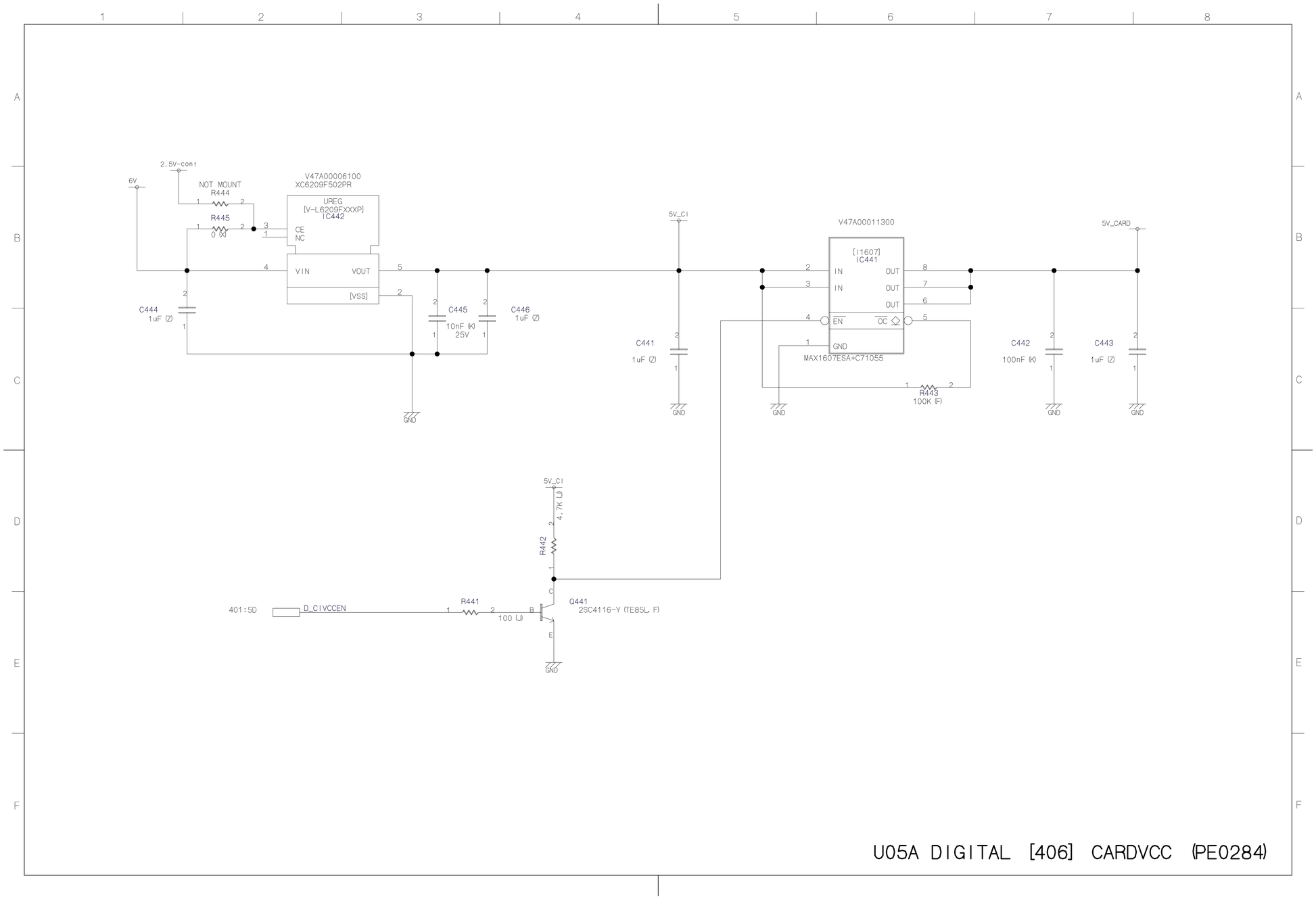

D_CONT_A
NO5
D_IO_AB
401:1E, 401:1E, 401:1E, 401:1D, 401:1B
D_TSIN_A
NO3
D_TSOUT_A
NO1
D_MA
404:6A
D_MD
405:1C
5V_CARD
[V-IS136T4]
1/2
PJ400
D_MD3I
D_MD4I
D_MD5I
D_MD6I
D_MD7I
D_CE1AI
D_MA10I
D_OEI
D_MA11I
D_MA9I
D_MA8I
D_MA13I
D_MA14I
D_WEI
D_RDYIRQAI
D_MIVALA
D_MICLKA
D_MA12I
D_MA7I
D_MA6I
D_MA5I
D_MA4I
D_MA3I
D_MA2I
D_MA1I
D_MA0I
D_MD0I
D_MD1I
D_MD2I
D_CD1AI
D_MDOA3
D_MDOA4
D_MDOA5
D_MDOA6
D_MDOA7
D_CE2AI
D_IORDI
D_IOWRI
D_MISTRTA
D_MDIA0
D_MDIA1
D_MDIA2
D_MDIA3
D_MDIA4
D_MDIA5
D_MDIA6
D_MDIA7
D_MOCLKA
D_RSTAI
D_WAITAI
D_REGI
D_MOVALA
D_MOSTRTA
D_MDOA0
D_MDOA1
D_MDOA2
D_CD2AI
R411
10K (J)
R412
10K (J)
GND
D_CD
NO6
D_MDO
NO4
D_MDI
NO2
[V-IS136T4]
2/2
PJ400
D_CD1BI
D_MDOB3
D_MDOB4
D_MDOB5
D_MDOB6
D_MDOB7
D_CE2BI
D_IORDI
D_IOWRI
D_MISTRTB
D_MDIB0
D_MDIB1
D_MDIB2
D_MDIB3
D_MDIB4
D_MDIB5
D_MDIB6
D_MDIB7
D_MOCLKB
D_RSTBI
D_WAITBI
D_REGI
D_MOVALB
D_MOSTRTB
D_MDOB0
D_MDOB1
D_MDOB2
D_CD2BI
D_MIVALB
D_MICLKB
R413
10K (J)
R414
10K (J)
1T
3T
2T
4T
W401
W402
NOT MOUNT
U05A DIGITAL [403] SLOWBUS (PE0284)



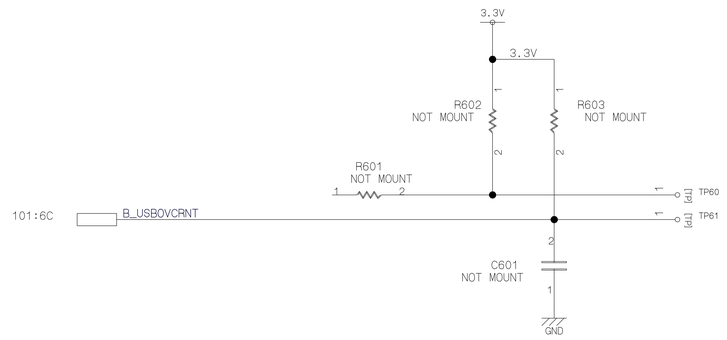

U05A DIGITAL [404] PODVPP (PE0284)

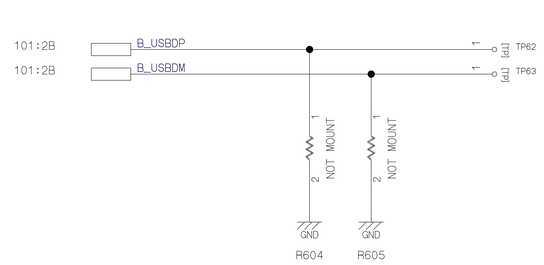



U05A DIGITAL [405] DVBCI I/F (PE0284)

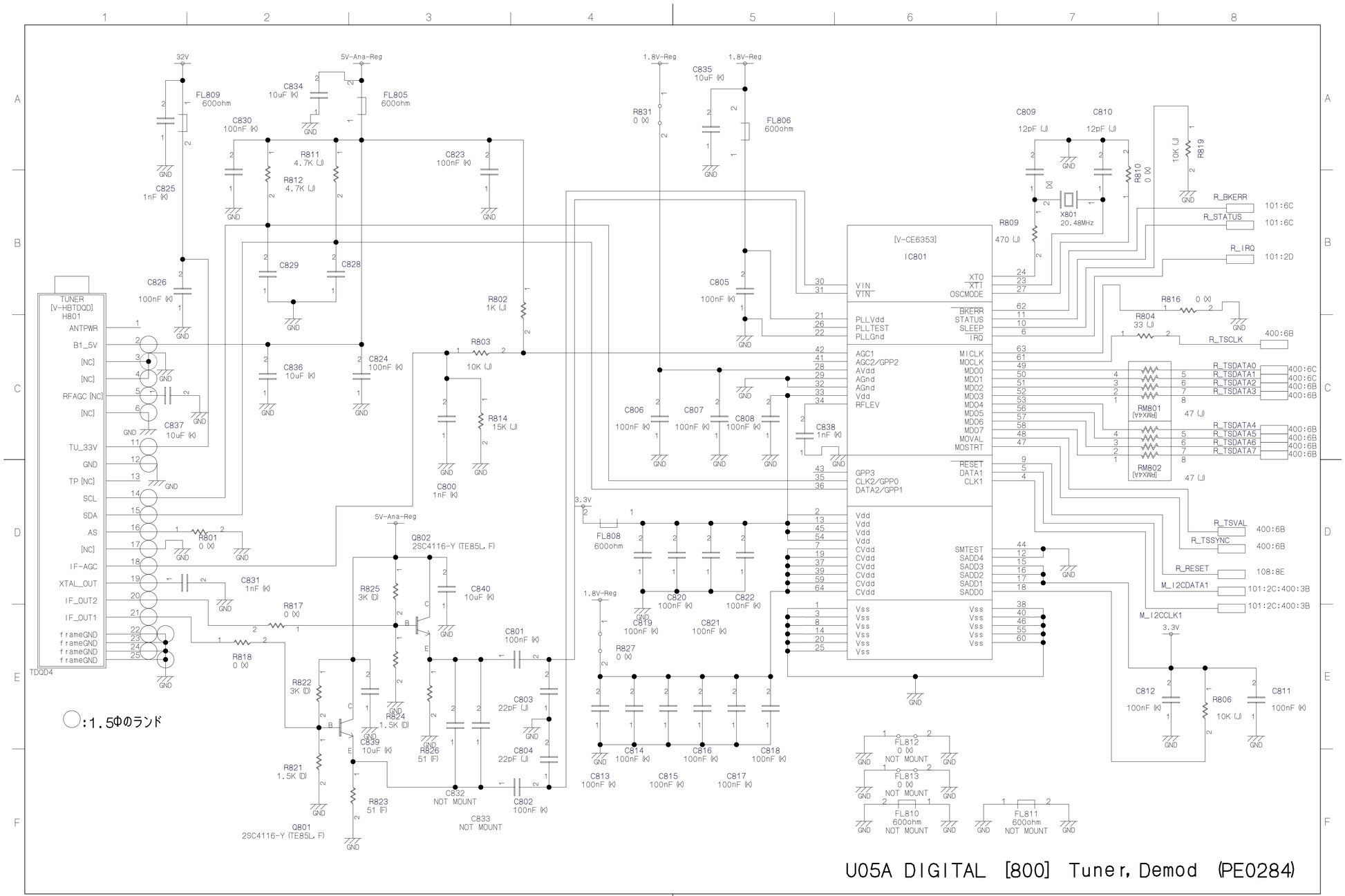


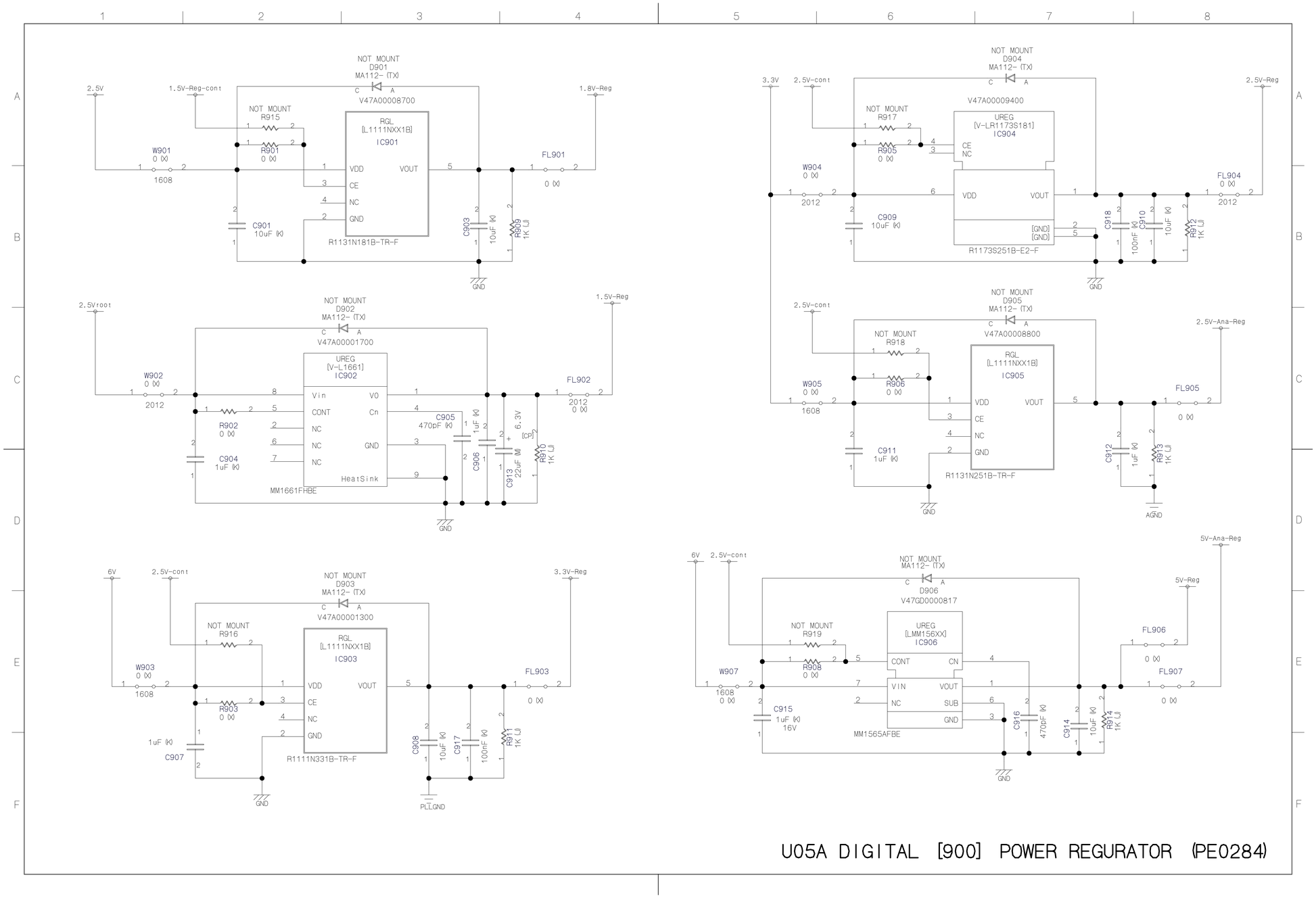

U05A DIGITAL [406] CARDVCC (PE0284)




U05A DIGITAL [600] USB (PE0284)


TUNER
[V-HBTDQD]
H801
ANTPWR
B1_5V
[NC]
[NC]
RFAGC [NC]
[NC]
TU_33V
GND
TP [NC]
SCL
SDA
AS
[NC]
IF-AGC
XTAL_OUT
IF_OUT2
IF_OUT1
frameGND
frameGND
frameGND
frameGND
TDQD4
○:1.5Φのランド
[V-CE6353]
IC801
VIN
VTN
PLLVdd
PLLTEST
PLLGnd
AGC1
AGC2/GPP2
AVdd
AGnd
AGnd
Vdd
RFLEV
GPP3
CLK2/GPP0
DATA2/GPP1
XTO
XTI
OSCMODE
BKERR
STATUS
SLEEP
IRQ
MICLK
MOCLK
MDO0
MDO1
MDO2
MDO3
MDO4
MDO5
MDO6
MDO7
MOVAL
MOSTRT
RESET
DATA1
CLK1
SMTEST
SADD4
SADD3
SADD2
SADD1
SADD0
Vdd
Vss
32V
5V-Ana-Reg
1.8V-Reg
3.3V
FL809 600ohm
FL805 600ohm
FL806 600ohm
FL808 600ohm
FL812 0 (X) NOT MOUNT
FL813 0 (X) NOT MOUNT
FL810 600ohm NOT MOUNT
FL811 600ohm NOT MOUNT
C834 10uF (K)
C835 10uF (K)
C830 100nF (K)
C823 100nF (K)
C825 1nF (K)
C826 100nF (K)
C829
C828
C836 10uF (K)
C824 100nF (K)
C837 10uF (K)
C831 1nF (K)
C800 1nF (K)
C805 100nF (K)
C806 100nF (K)
C807 100nF (K)
C808 100nF (K)
C838 1nF (K)
C820 100nF (K)
C822 100nF (K)
C819 100nF (K)
C821 100nF (K)
C814 100nF (K)
C816 100nF (K)
C818 100nF (K)
C813 100nF (K)
C815 100nF (K)
C817 100nF (K)
C809 12pF (J)
C810 12pF (J)
C812 100nF (K)
C811 100nF (K)
C801 100nF (K)
C803 22pF (J)
C804 22pF (J)
C802 100nF (K)
C832 NOT MOUNT
C833 NOT MOUNT
C839 10uF (K)
R831 0 (X)
R811 4.7K (J)
R812 4.7K (J)
R802 1K (J)
R803 10K (J)
R814 15K (J)
R801 0 (X)
R817 0 (X)
R818 0 (X)
R822 3K (D)
R824 1.5K (D)
R821 1.5K (D)
R825 3K (D)
R826 51 (F)
R823 51 (F)
R827 0 (X)
R809 470 (J)
R810 0 (X)
R819 10K (J)
R816 0 (X)
R804 33 (J)
R806 10K (J)
X801 20.48MHz
RM801 [4pXn] 47 (J)
RM802 [4pXn] 47 (J)
Q802 2SC4116-Y (TE85L, F)
Q801 2SC4116-Y (TE85L, F)
R_BKERR 101:6C
R_STATUS 101:6C
R_IRQ 101:2D
R_TSCLK 400:6B
R_TSDATA0 400:6C
R_TSDATA1 400:6C
R_TSDATA2 400:6B
R_TSDATA3 400:6B
R_TSDATA4 400:6B
R_TSDATA5 400:6B
R_TSDATA6 400:6B
R_TSDATA7 400:6B
R_TSVAL 400:6B
R_TSSYNC 400:6B
R_RESET 108:8E
M_I2CDATA1 101:2C:400:3B
M_I2CCLK1 101:2C:400:3B
U05A DIGITAL [800] Tuner, Demod (PE0284)


NOT MOUNT
D901
MA112-(TX)
V47A00008700
2.5V
1.5V-Reg-cont
1.8V-Reg
NOT MOUNT
R915
W901
0 (X)
1608
R901
0 (X)
RGL
[L1111NXX1B]
IC901
VDD
VOUT
CE
NC
GND
FL901
0 (X)
C901
10uF (K)
R1131N181B-TR-F
C903
10uF (K)
R909
1K (J)
GND
2.5Vroot
1.5V-Reg
NOT MOUNT
D902
MA112-(TX)
V47A00001700
UREG
[V-L1661]
IC902
W902
0 (X)
2012
Vin
VO
CONT
Cn
NC
NC
GND
NC
HeatSink
FL902
2012
0 (X)
R902
0 (X)
C905
470pF (K)
C904
1uF (K)
C906
1uF (K)
C913
22uF (M)
6.3V
[CP]
R910
1K (J)
MM1661FHBE
GND
3.3V
2.5V-cont
2.5V-Reg
NOT MOUNT
D904
MA112-(TX)
V47A00009400
NOT MOUNT
R917
UREG
[V-LR1173S181]
IC904
R905
0 (X)
CE
NC
W904
0 (X)
2012
VDD
VOUT
[GND]
[GND]
FL904
0 (X)
2012
C909
10uF (K)
R1173S251B-E2-F
C918
100nF (K)
C910
10uF (K)
R912
1K (J)
GND
2.5V-cont
2.5V-Ana-Reg
NOT MOUNT
D905
MA112-(TX)
V47A00008800
NOT MOUNT
R918
RGL
[L1111NXX1B]
IC905
R906
0 (X)
W905
0 (X)
1608
VDD
VOUT
CE
NC
GND
FL905
0 (X)
C911
1uF (K)
R1131N251B-TR-F
C912
1uF (K)
R913
1K (J)
GND
AGND
6V
2.5V-cont
3.3V-Reg
NOT MOUNT
D903
MA112-(TX)
V47A00001300
NOT MOUNT
R916
RGL
[L1111NXX1B]
IC903
W903
0 (X)
1608
VDD
VOUT
CE
NC
GND
FL903
0 (X)
R903
0 (X)
1uF (K)
C907
R1111N331B-TR-F
C908
10uF (K)
C917
100nF (K)
R911
1K (J)
GND
PLLGND
6V
2.5V-cont
5V-Ana-Reg
NOT MOUNT
MA112-(TX)
D906
V47GD0000817
NOT MOUNT
R919
UREG
[LMM156XX]
IC906
5V-Reg
FL906
0 (X)
R908
0 (X)
W907
1608
0 (X)
CONT
CN
VIN
VOUT
NC
SUB
GND
FL907
0 (X)
C915
1uF (K)
16V
MM1565AFBE
C916
470pF (K)
C914
10uF (K)
R914
1K (J)
GND
U05A DIGITAL [900] POWER REGURATOR (PE0284)

POWER CONNECTOR

B8B-EH (LF)
V22GD0000974
[CN8]
P820A

1:2.5V
2:33V
3:12V
4:GND
5:GND
6:6V
7:3.3V
8:M_TVRESET

TO U02A LOW_B [1] CONNECTOR (PE0253)
P820B ← P820A

FL951 MPZ1608S221AT 220ohm
FL952 MPZ1608S221AT 220ohm
FL953 MPZ1608S221AT 220ohm
FL954 MPZ1608S221AT 220ohm
FL955 MPZ1608S221AT 220ohm
FL971 MPZ1608S221AT 220ohm
MCF185AN471M04AK [FL07A] FL956
MCF185AN471M04AK [FL07A] FL957
MCF185AN471M04AK [FL07A] FL958
MCF185AN471M04AK [FL07A] FL959
MCF185AN471M04AK [FL07A] FL960
MCF185AN471M04AK [FL07A] FL970
MCF185AN471M04AK [FL07A] FL972

C951 1nF (K)
C952 1nF (K)
C953 1nF (K)
C954 1nF (K)
C955 1nF (K)
C961 1nF (K)

2.5Vroot

[MFPF] Q952 FDC602P_NF40
[MFPF] Q953 FDC602P_NF40
[MFPF] Q954 FDC602P_NF40

R953 0 (X)
R954 0 (X)
R955 0 (X)

R957 1K (J) NOT MOUNT

NOT MOUNT R963 10K (J)
2.5V-cont
NOT MOUNT C965 470nF (K)

2.5V
C959 10uF (K) 10V
32V
C960 1uF (Z) 50V
12V
C957 10uF (K) 16V
6V
C956 10uF (K) 10V
3.3V
C958 10uF (K) 10V

NOT MOUNT R956 2012

R958 1K (J) NOT MOUNT
R959 1K (J) NOT MOUNT

M_TVRESET
108:1B

NOT MOUNT R961 10K (J)
R952

1.5V-Reg
1.5V-Reg-cont

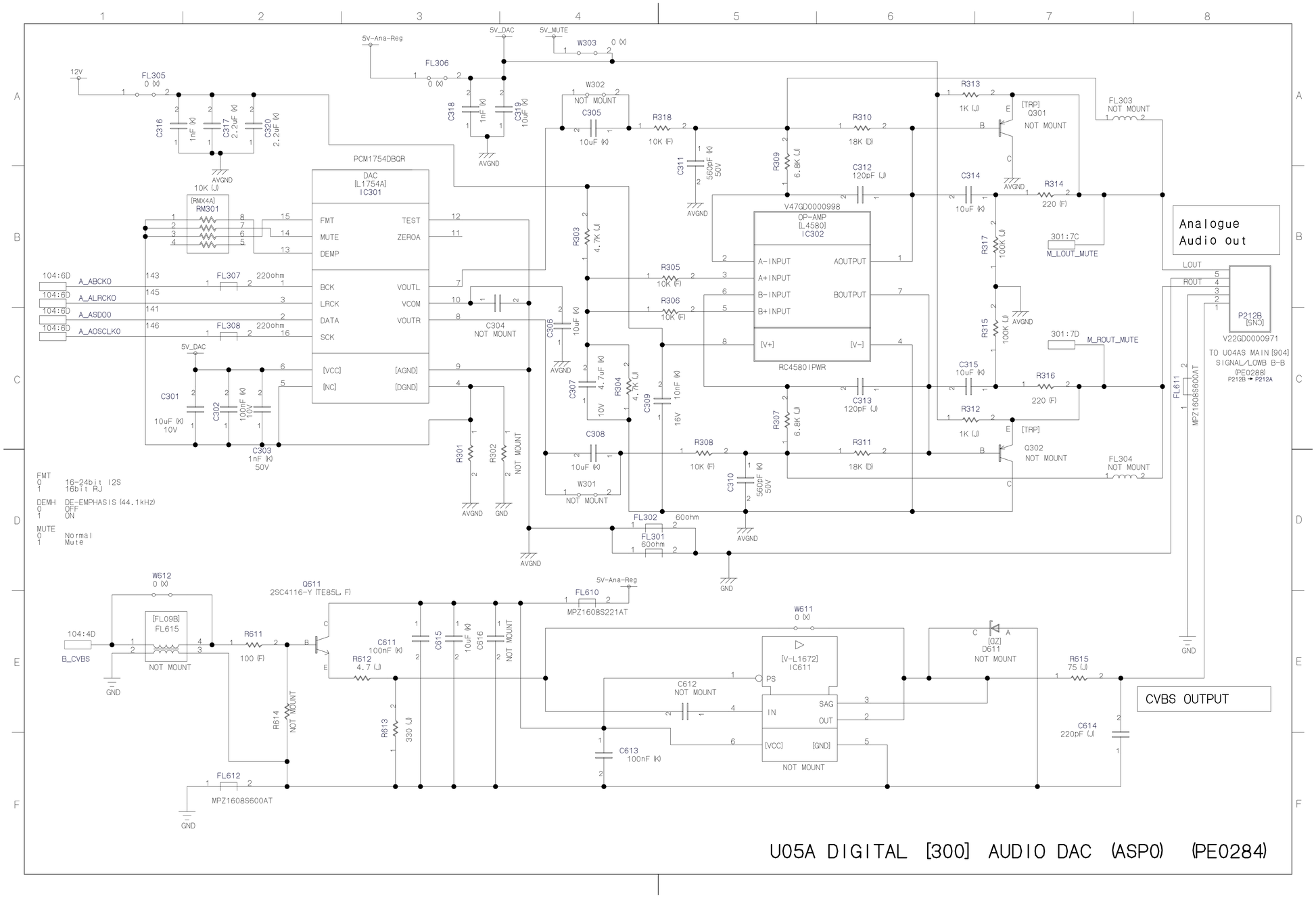
2SC4116-Y (TE85L, F)
Q951

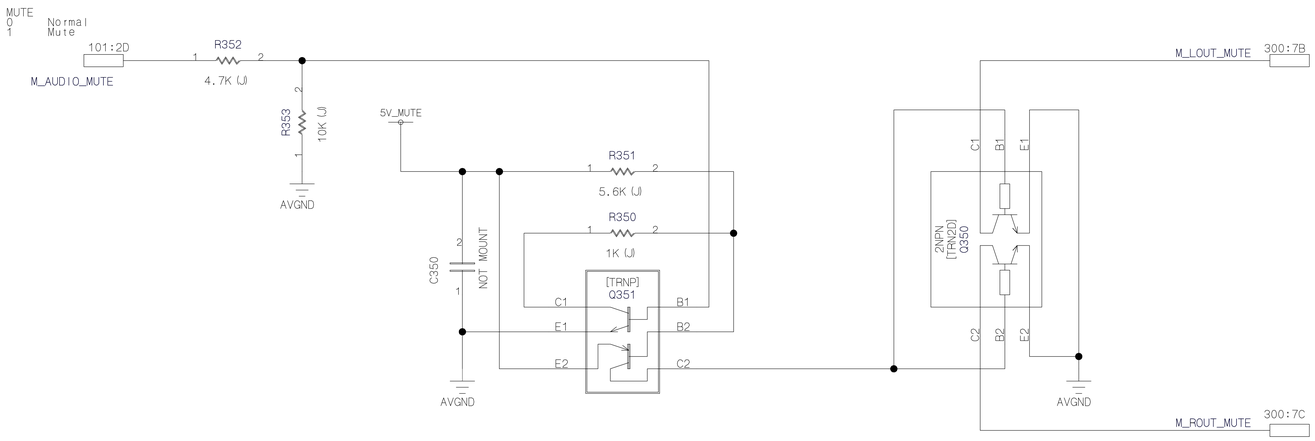
R951 10K (J)
NOT MOUNT C963 1uF (K)
C962 470nF (K)
R960 10K (J) NOT MOUNT
NOT MOUNT R962 10K (J)
C964 470nF (K) NOT MOUNT

FL964 0 (X)
FL965 0 (X)
FL966 0 (X)

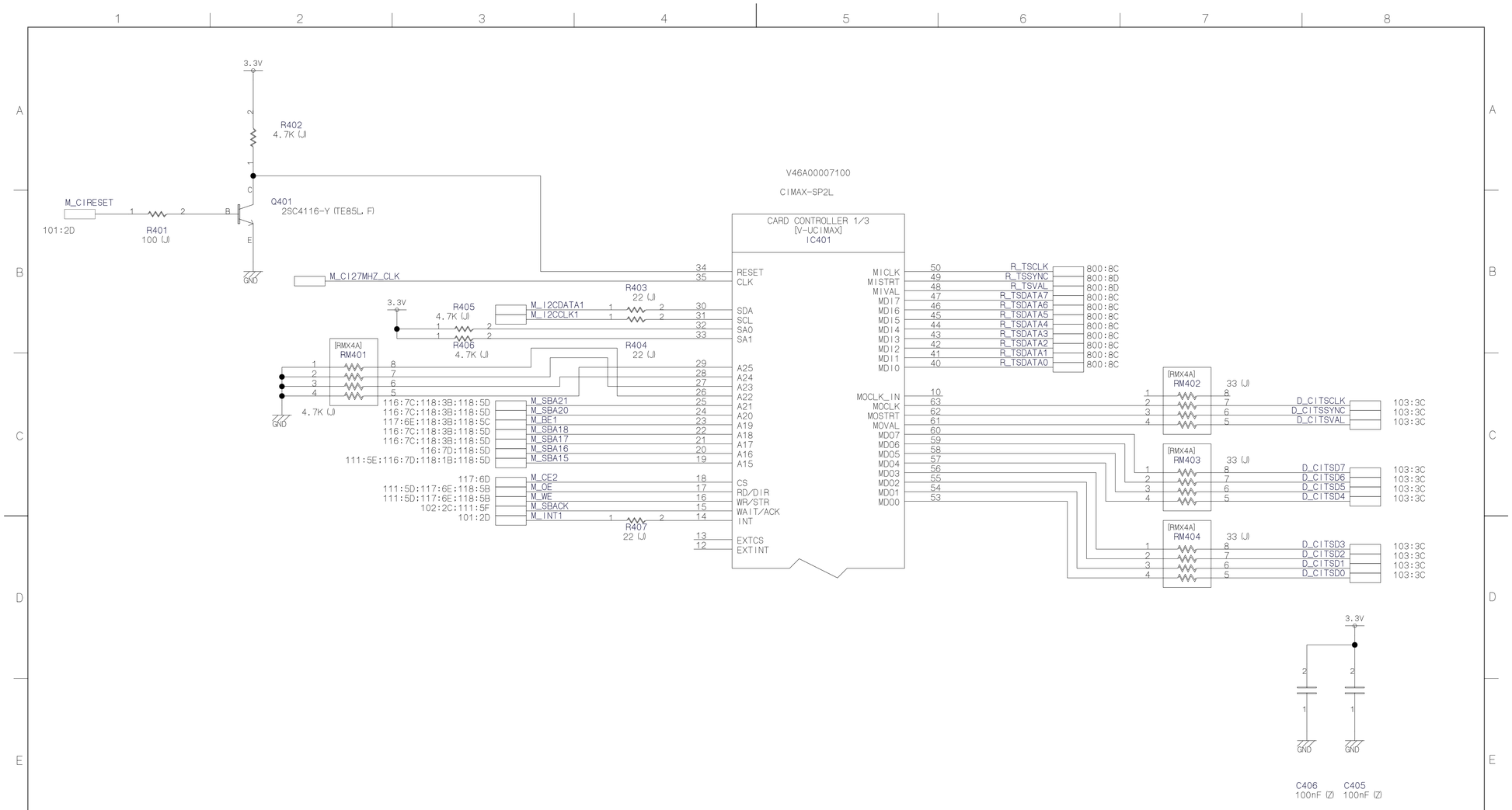
GND
AGND

U05A DIGITAL [901] POWER CONNECTOR (PE0284)

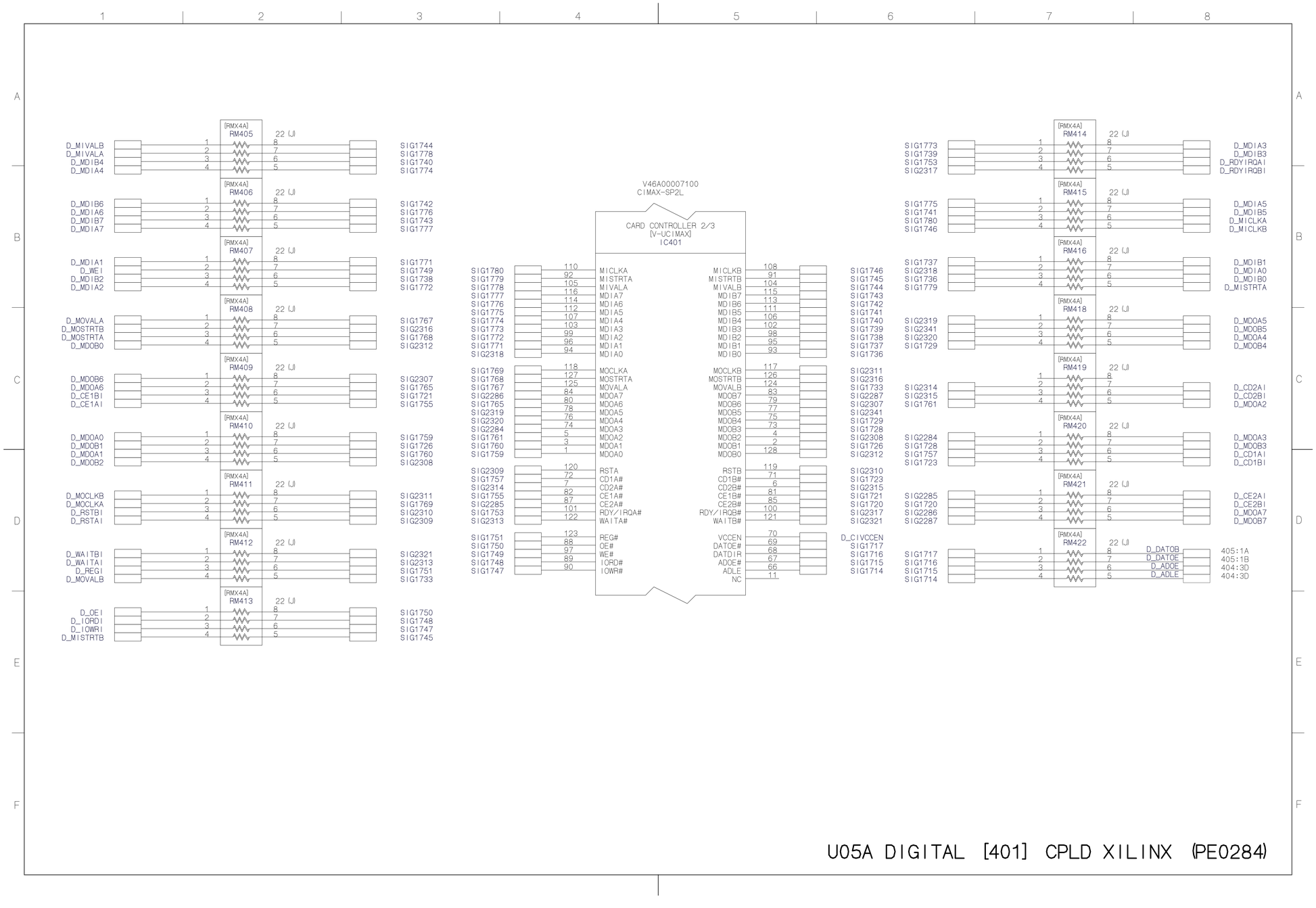

5V-Ana-Reg
5V_DAC
5V_MUTE
W303 0 (X)
FL306
12V
FL305 0 (X)
C316 1nF (K)
C317 2.2uF (K)
C320 2.2uF (K)
C318 1nF (K)
C319 10uF (K)
AVGND
W302 NOT MOUNT
C305 10uF (K)
R318 10K (F)
C311 560pF (K) 50V
R309 6.8K (J)
R310 18K (D)
R313 1K (J)
[TRP] Q301 NOT MOUNT
FL303 NOT MOUNT
C312 120pF (J)
C314 10uF (K)
R314 220 (F)
PCM1754DBQR
DAC [L1754A] IC301
10K (J)
[RMX4A] RM301
FMT
MUTE
DEMP
TEST
ZEROA
BCK
LRCK
DATA
SCK
VOUTL
VCOM
VOUTR
[VCC]
[AGND]
[NC]
[DGND]
V47GD0000998
OP-AMP [L4580] IC302
A-INPUT
A+INPUT
B-INPUT
B+INPUT
AOUTPUT
BOUTPUT
[V+]
[V-]
RC4580IPWR
R303 4.7K (J)
R305 10K (F)
R306 10K (F)
R317 100K (J)
R315 100K (J)
301:7C M_LOUT_MUTE
301:7D M_ROUT_MUTE
104:6D A_ABCK0
104:6D A_ALRCK0
104:6D A_ASDO0
104:6D A_AOSCLK0
FL307 220ohm
FL308 220ohm
C304 NOT MOUNT
C306 10uF (K)
C307 4.7uF (K) 10V
R304 4.7K (J)
C309 10nF (K) 16V
C315 10uF (K)
R316 220 (F)
C313 120pF (J)
R312 1K (J)
[TRP] Q302 NOT MOUNT
FL304 NOT MOUNT
C301 10uF (K) 10V
C302 100nF (K) 10V
C303 1nF (K) 50V
C308 10uF (K)
R308 10K (F)
R307 6.8K (J)
R311 18K (D)
C310 560pF (K) 50V
R301
R302 NOT MOUNT
W301 NOT MOUNT
FL302 60ohm
FL301 60ohm
GND
Analogue Audio out
LOUT
ROUT
P212B [SNO]
V22GD0000971
TO U04AS MAIN [904] SIGNAL/LOWB B-B (PE0288) P212B → P212A
FL611 MPZ1608S600AT
FMT
0 16-24bit I2S
1 16bit RJ
DEMH DE-EMPHASIS (44.1kHz)
0 OFF
1 ON
MUTE
0 Normal
1 Mute
W612 0 (X)
Q611 2SC4116-Y (TE85L, F)
FL610 MPZ1608S221AT
5V-Ana-Reg
W611 0 (X)
[FL09B] FL615 NOT MOUNT
104:4D B_CVBS
R611 100 (F)
C611 100nF (K)
C615
C616 10uF (K)
NOT MOUNT
R612 4.7 (J)
R614 NOT MOUNT
R613 330 (J)
[V-L1672] IC611
PS
IN
SAG
OUT
[VCC]
[GND]
C612 NOT MOUNT
C613 100nF (K) NOT MOUNT
[DZ] D611 NOT MOUNT
R615 75 (J)
C614 220pF (J)
CVBS OUTPUT
FL612 MPZ1608S600AT
U05A DIGITAL [300] AUDIO DAC (ASP0) (PE0284)




# U05A DIGITAL [301] AUDIO MUTE (PE0284)

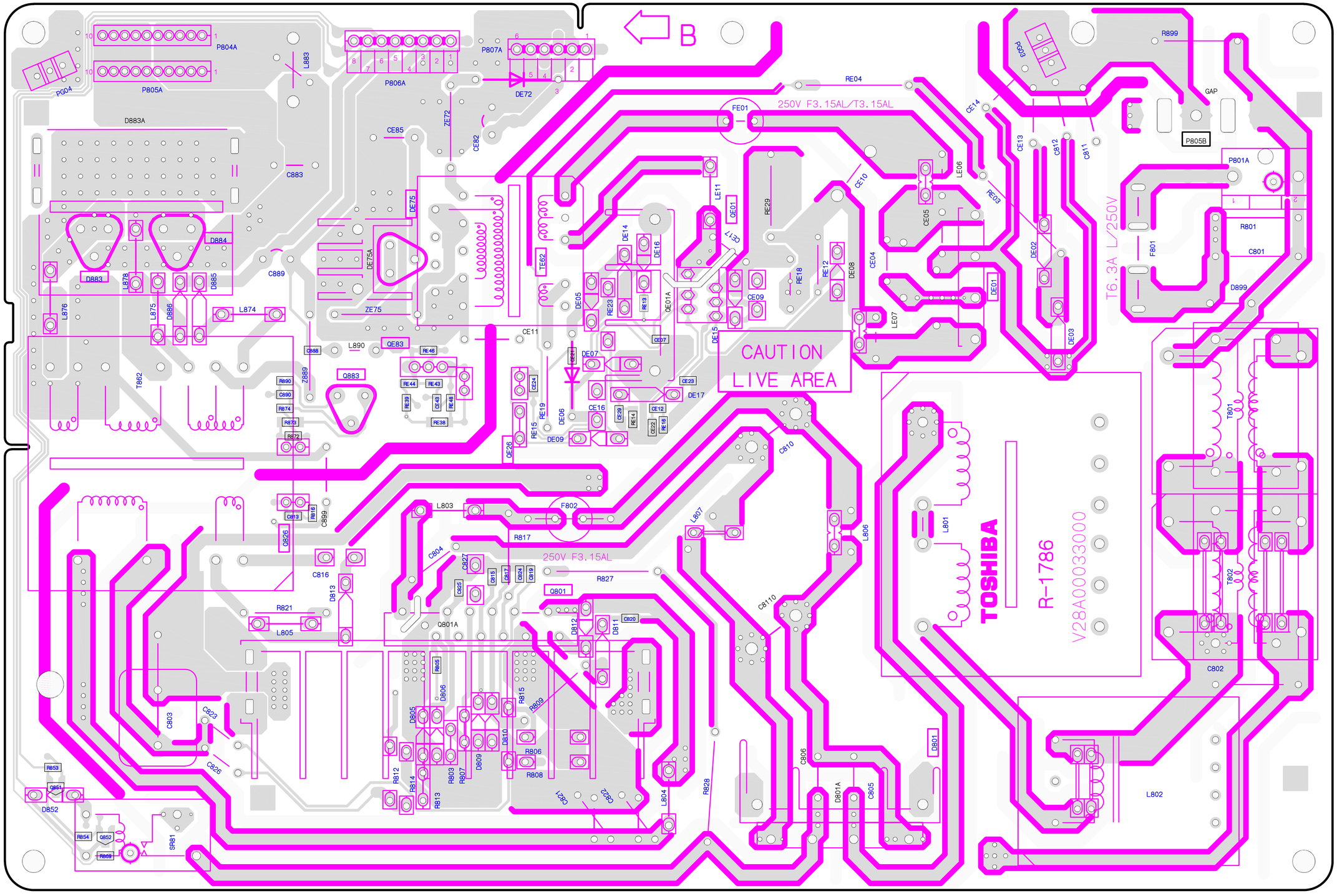



U05A DIGITAL [400] CIMAX (PE0284)

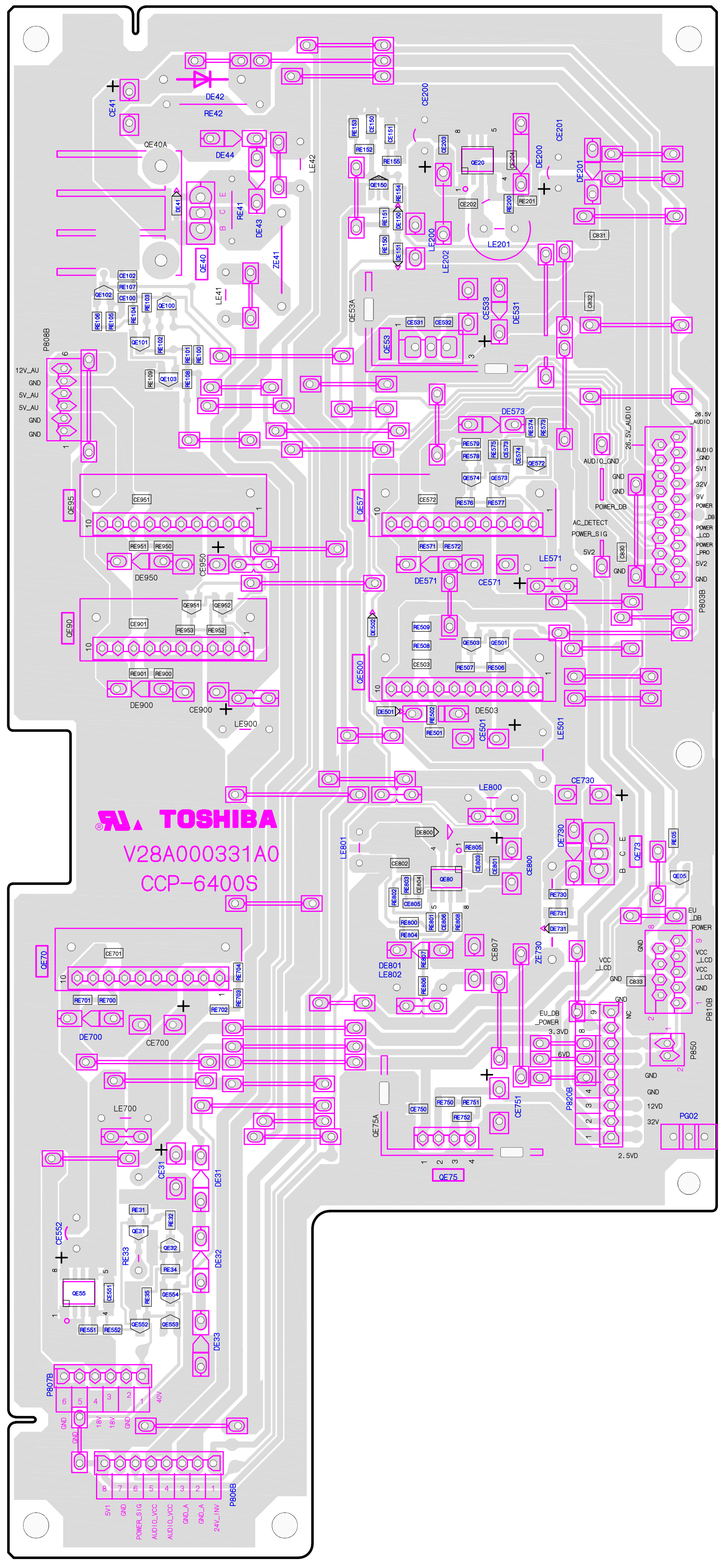



U05A DIGITAL [401] CPLD XILINX (PE0284)

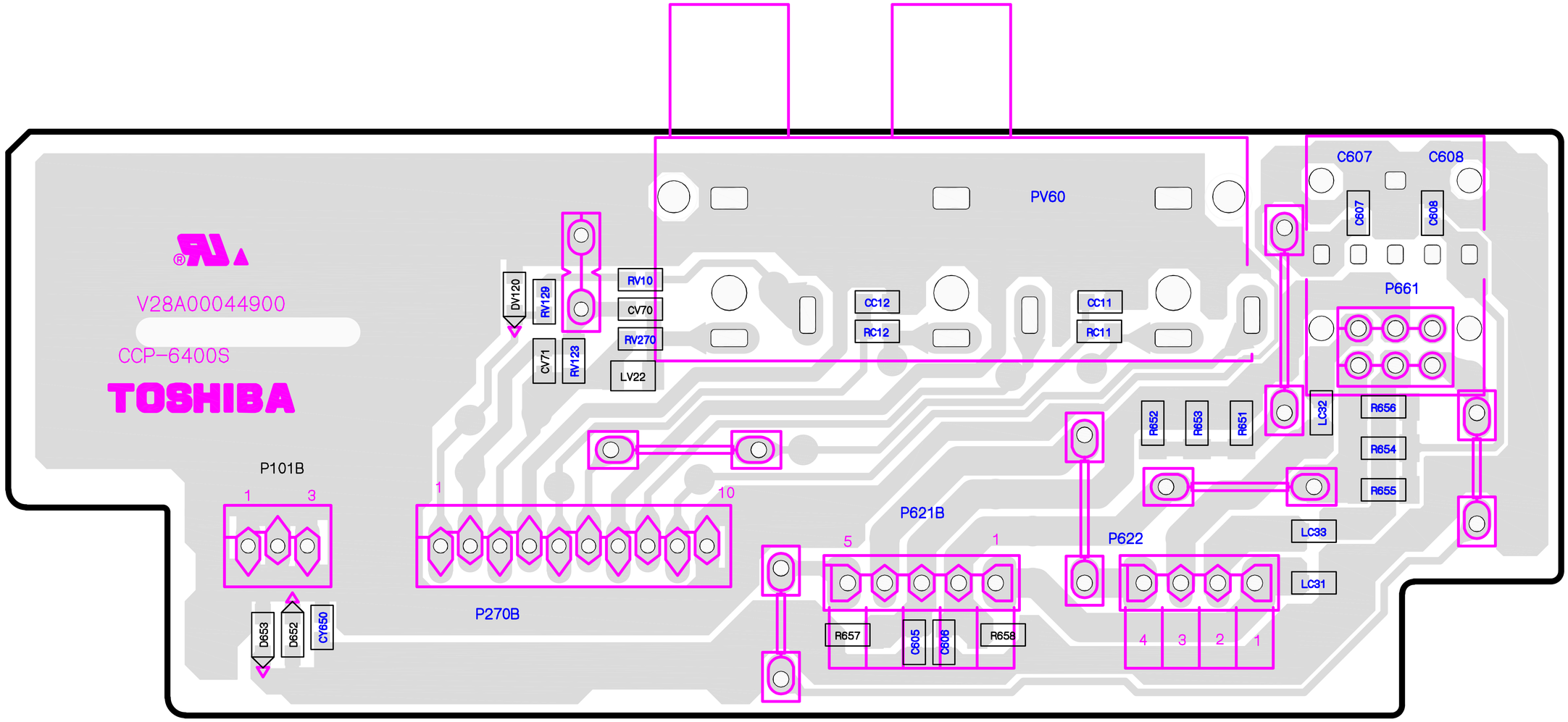
# U01A POWER [Bottom] (PE0252)



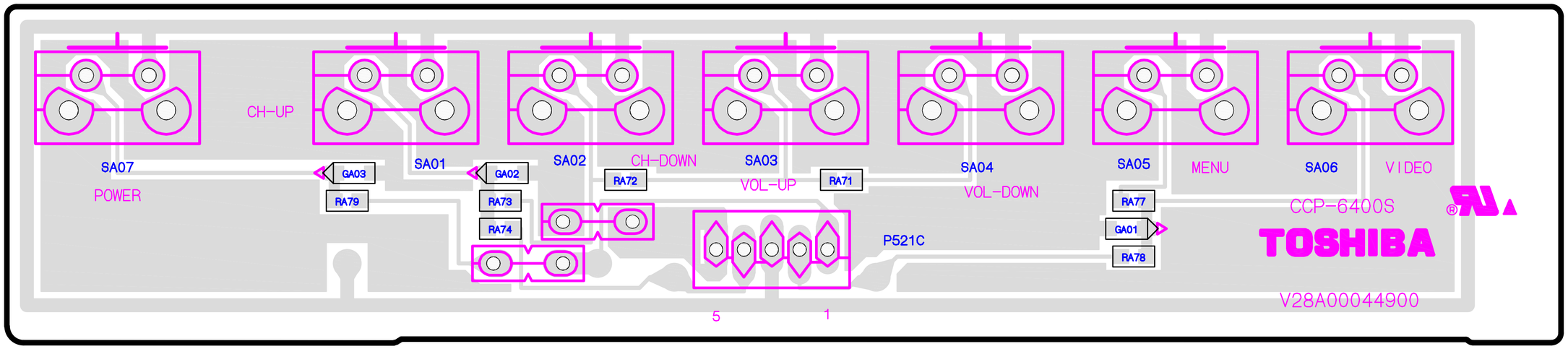
# U02A LOW_B [Bottom] (PE0253)



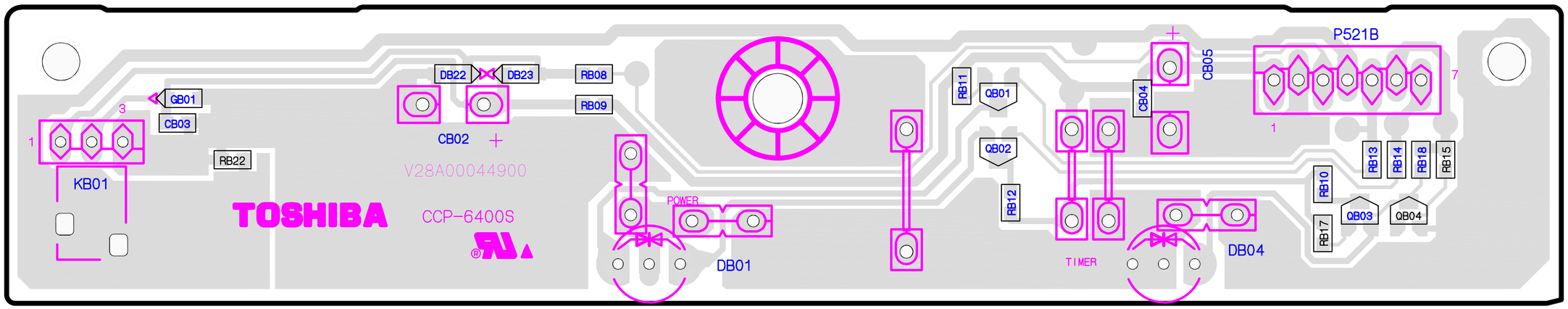
# U03A FRONT_AV [Bottom] (PE0287)



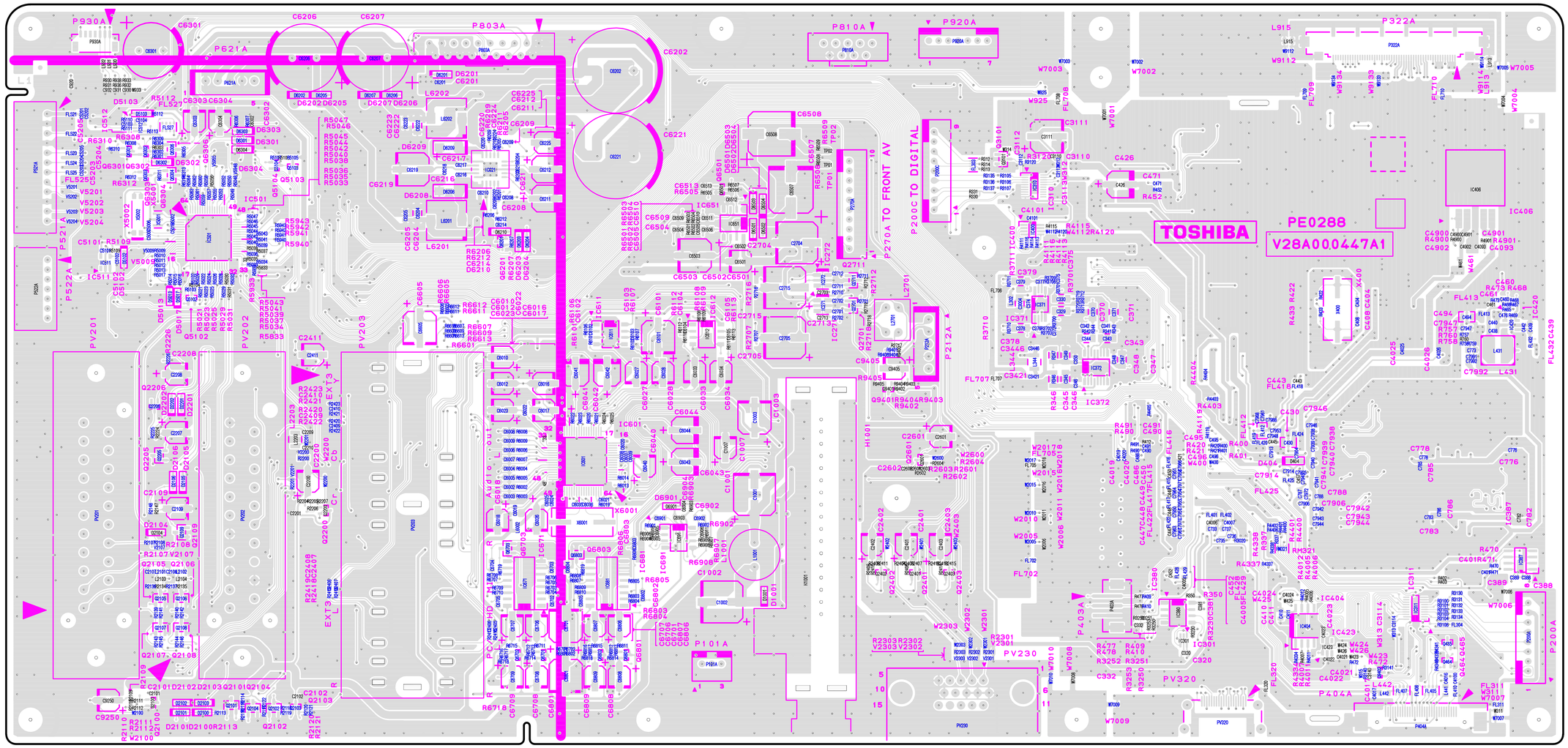
# U03B KEY [Bottom] (PE0287)



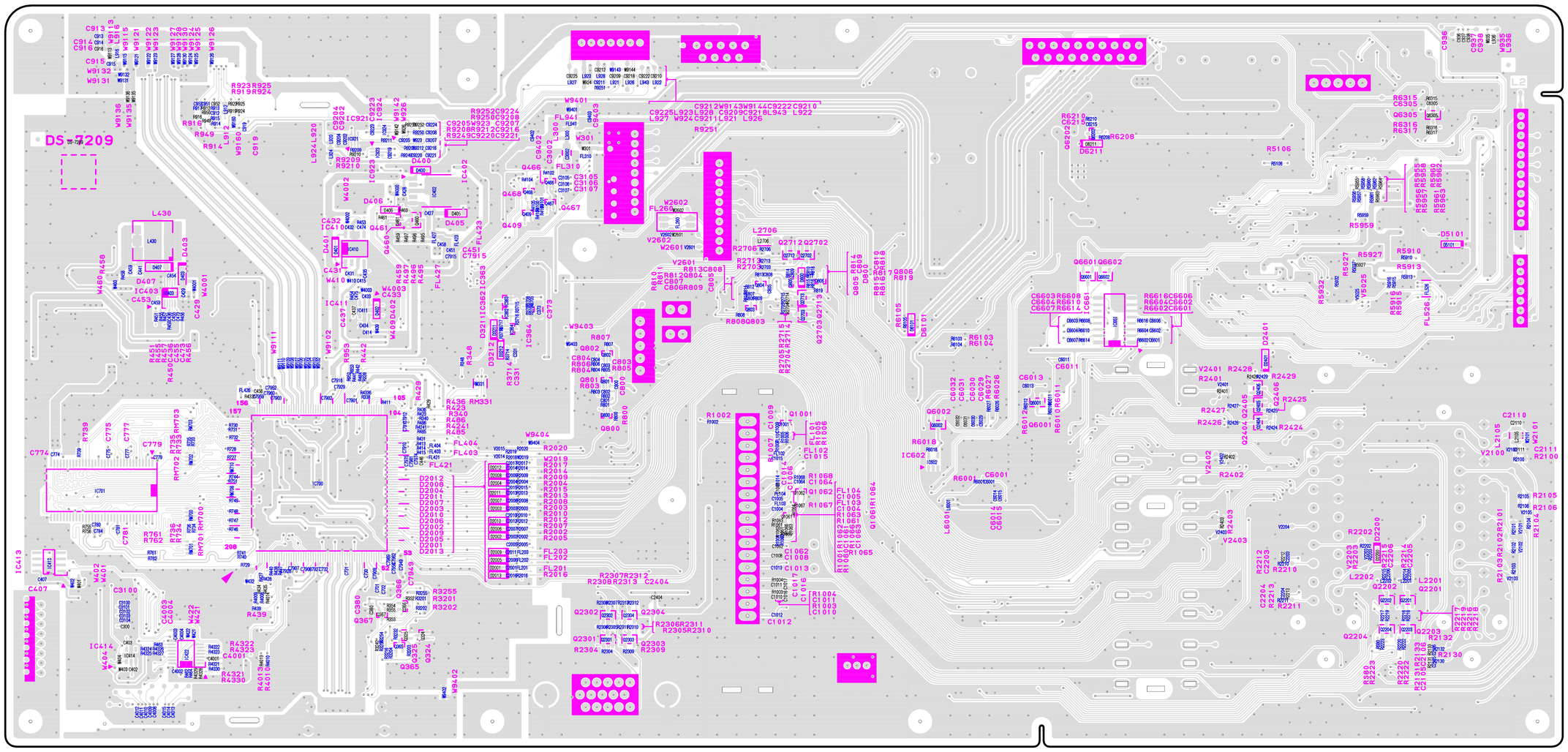
# U03C LED [Bottom] (PE0287)



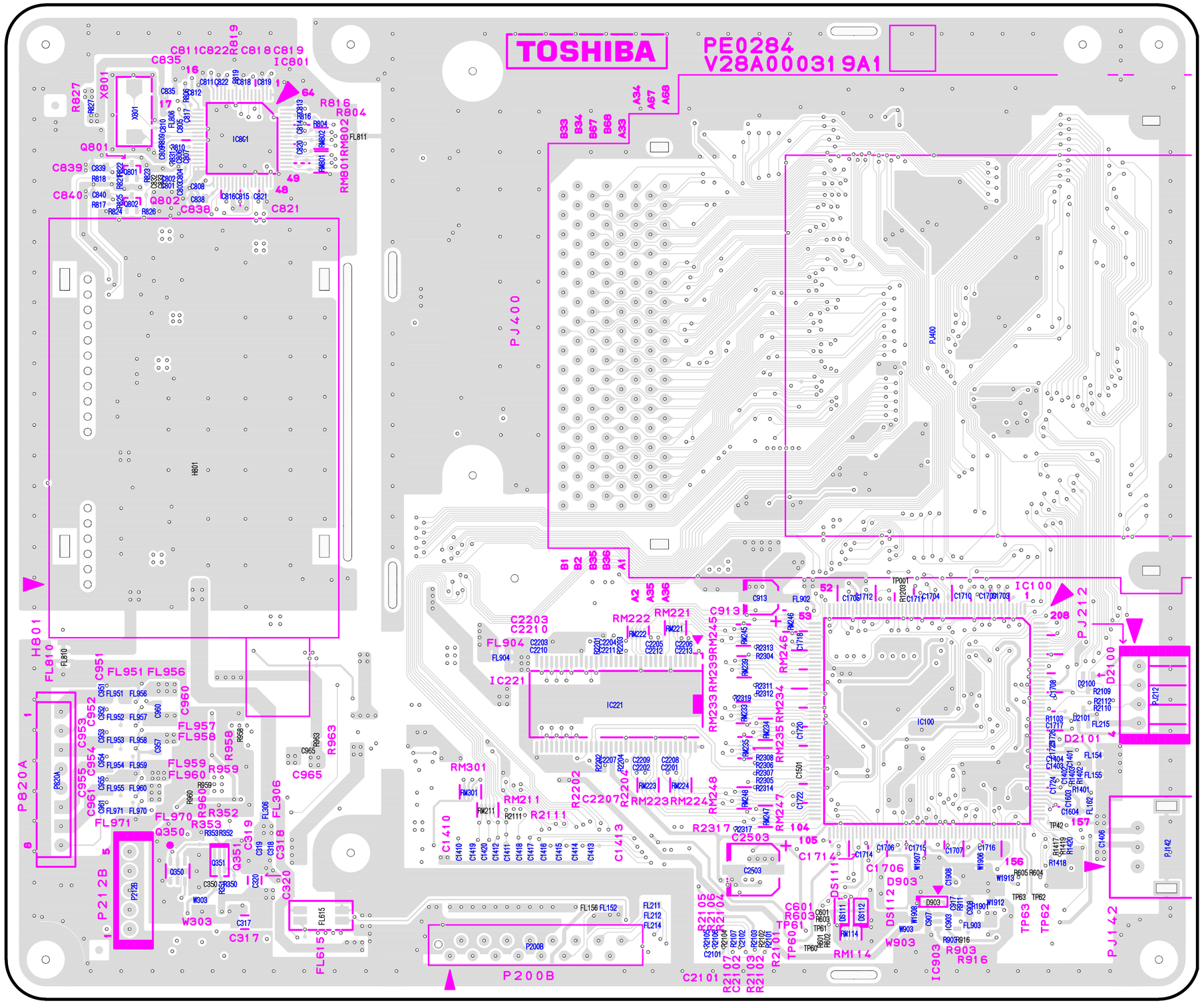
# U04AS MAIN [Top] (PE0288)



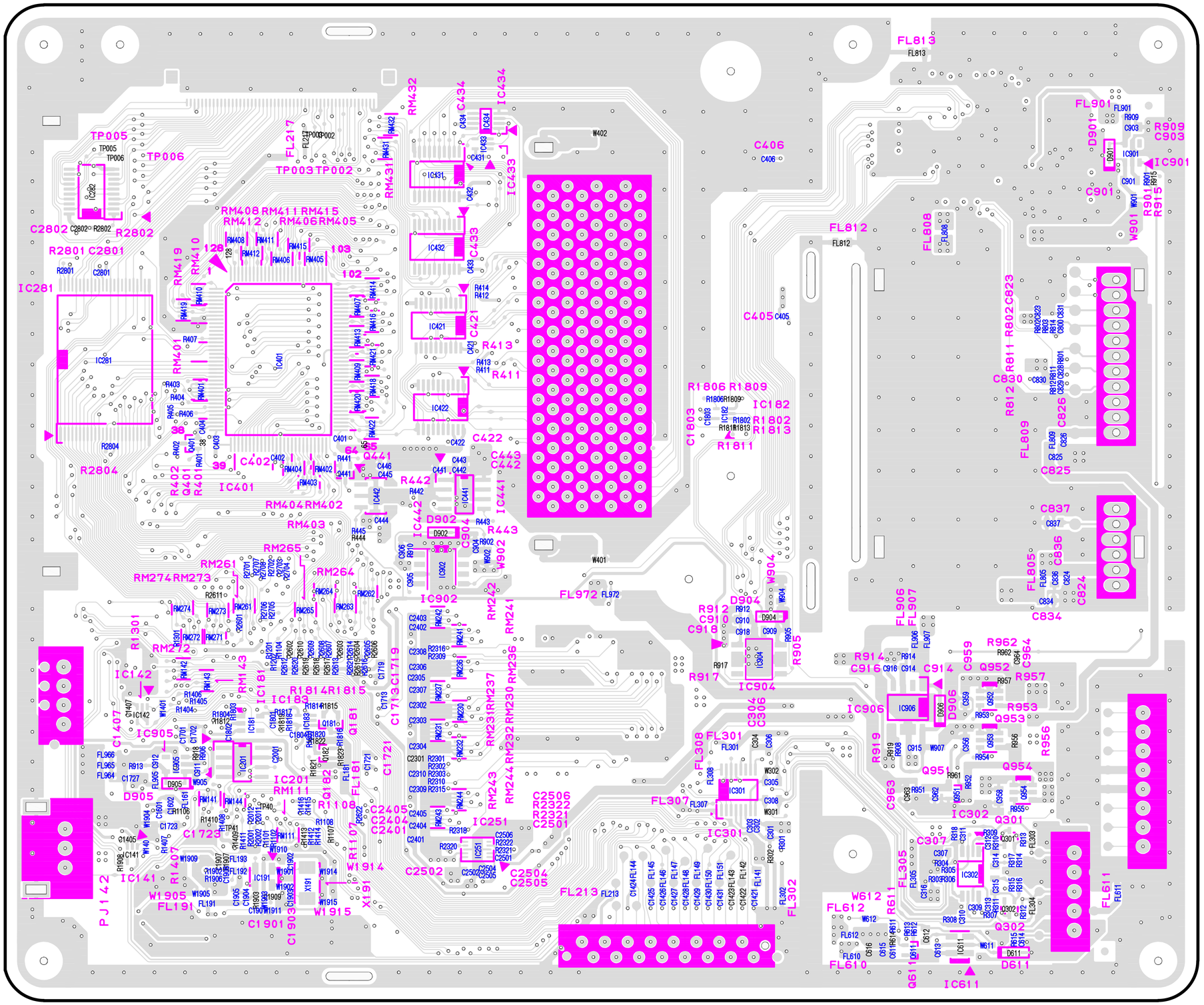
# U04AS MAIN [Bottom] (PE0288)



# U05A DIGITAL [Top] (PE0284)


TOSHIBA
PE0284
V28A00031 9A1
IC801
IC861
Q801
Q802
X801
H801
P820A
P212B
P200B
PJ400
IC221
IC100
PJ212
PJ142
D2100
D2101
D903
IC903
R916
TP60
TP61
TP62
TP63
RM114
C2101
C2107
C2102
C2103
C2104
C2105
C2106
C1706
C1714
C2503
C1413
C1410
C2207
C2202
C2204
C2209
C2208
C2201
RM301
RM211
RM221
RM222
RM223
RM224
RM233
RM234
RM235
RM239
RM245
RM246
RM247
RM248
C913
FL902
FL904
FL810
FL951
FL956
FL957
FL958
FL959
FL960
FL970
FL971
FL615
FL306
FL156
FL152
FL211
FL212
FL214
FL811
RH801
RH802
C811
C822
C818
C819
C835
C838
C821
C965
R963
R958
R959
R960
R961
R352
R353
C319
C320
C317
W303
Q350
Q351
W903
W1908
W1907
W1906
W1912
W1913
D903
D5111
D5112
C1708
C1709
C1703
C1704
C1710
C1712
C1705
C1711
C1716
C1707
C1715
C1717
C1724
C1725
C1726
C1722
C1720
C1501
C1604
C1405
C1402
C1403
C1404
C1401
R1401
R1402
R1403
R1417
R1419
R1420
R1418
R605
R604
R603
R601
R602
R2109
R2110
R2112
R1103
R2101
FL215
FL154
FL155
FL182
TP42
TP001
R1203
R1711
R1712
R1713
R1714
R1715
R1716
R1717
R1718
R1719
R1720
R1721
R1722
R1723
R1724
R1725
R1726
R1727
R1728
R1729
R1730
R1731
R1732
R1733
R1734
R1735
R1736
R1737
R1738
R1739
R1740
R1741
R1742
R1743
R1744
R1745
R1746
R1747
R1748
R1749
R1750

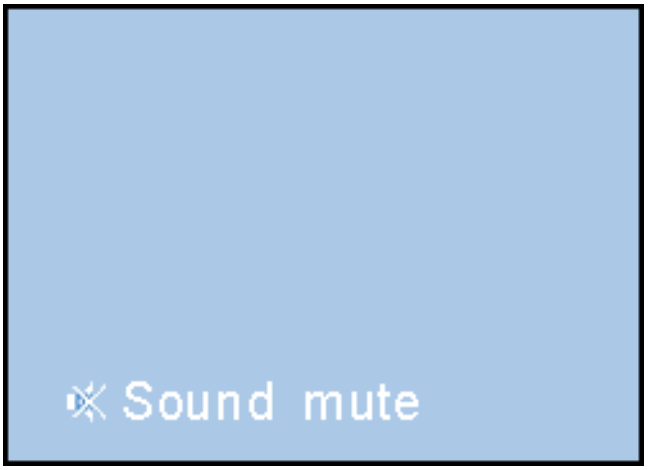
# U05A DIGITAL [Bottom] (PE0284)


TP005
TP006
C2802
R2802
R2801
C2801
IC281
RM408 RM411 RM415
RM412 RM406 RM405
RM419
RM410
RM401
RM407
RM414
RM413
RM416
RM409
RM421
RM418
RM420
RM422
RM417
RM432
RM431
FL217
TP003 TP002
C434
IC434
IC431
C431
C432
IC433
C433
IC432
R414
R412
IC421
C421
R413
R411
IC422
C422
C443
C442
C441
IC441
R442
Q441
C446
C445
C444
IC442
D902
R443
C904
R902
W902
IC902
RM404 RM402
RM403
RM265
RM261
RM264
RM263
RM262
RM274 RM273
RM272 RM271
RM241
RM242
RM236
RM237
RM231
RM230
RM232
RM244
RM243
C2403
C2402
C2308
C2306
C2305
C2307
C2302
C2303
C2304
C2301
C2310
C2309
C2405
C2404
C2401
R2316
R2309
R2301
R2302
R2303
R2310
R2315
R2318
IC251
C2506
R2322
R2321
C2501
C2502
C2504
C2505
C2502
R1301
IC142
RM142
RM143
IC181
IC183
R1814 R1815
C1407
C1713 C1719
C1721
Q181
FL181
Q182
R1108
C2405
C2404
C2401
R1107
W1914
X191
W1915
C1903
C1901
PJ142
IC141
R1407
W1905
FL191
C1723
IC401
C401
C402
Q401
R402
R401
R2804
IC201
RM111
D905
C1727
FL965
FL966
FL964
IC905
C1702
C1701
R913
C912
C911
C905
C1601
Q1602
FL161
W1904
W1909
W1910
W1911
W1907
FL193
FL192
C1902
C1904
C1905
C1906
C1907
C1908
C1909
C1910
C1911
C1912
C1913
C1914
C1915
C1916
C1917
C1918
C1919
C1920
C1921
C1922
C1923
C1924
C1925
C1926
C1927
C1928
C1929
C1930
C1931
C1932
C1933
C1934
C1935
C1936
C1937
C1938
C1939
C1940
C1941
C1942
C1943

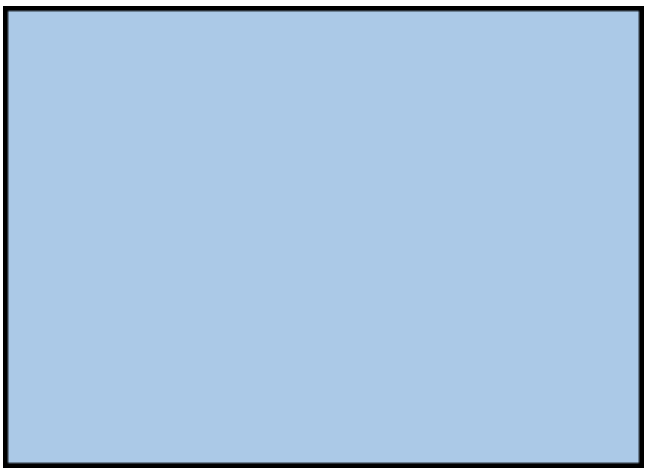
# ADJUSTMENT

## Service Mode

### Entering to Service Mode




↓

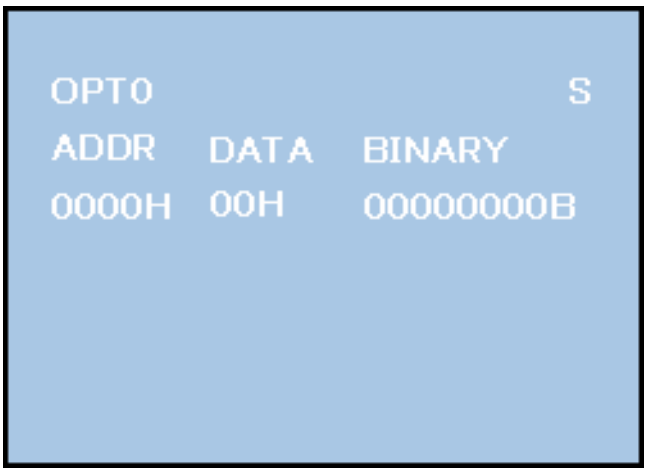


↓

Service Mode display

1. Set VOLUME to minimum and press button once on remote control.

2. Press button again and hold button down.

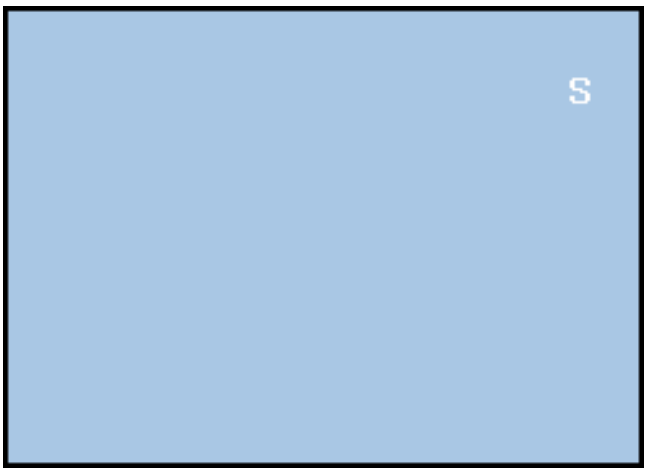



3. While holding the button, press MENU button on TV set.

## Displaying the Adjustment Menu

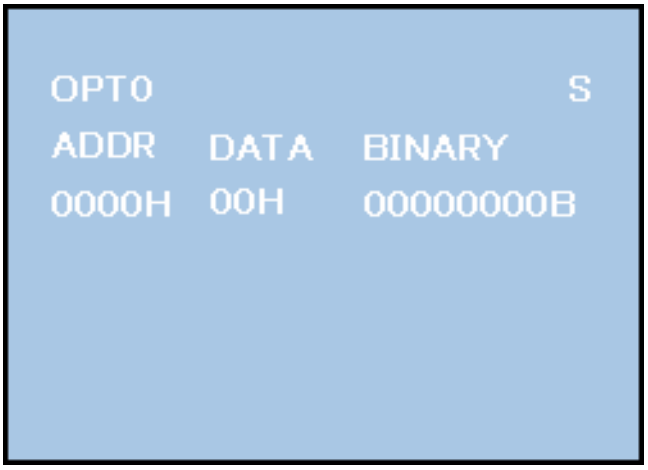
Press MENU button on TV.

Service Mode




Press ↑ ↓ Press

Adjustment Mode




## Key Function in the Service Mode

The following key entry during display of adjustment menu provides special functions.

**CAUTION: Never try to perform initialization unless you have changed the memory IC.**

| | |
|---|---|
| Test signal selection | button (on remote control) |
| Selection of the adjustment items | CH ▲/▼ (on TV or remote control) |
| Change of the data value | Volume +/- (on TV or remote control) |
| Adjustment menu mode ON/OFF | MENU button (on TV) |
| Initialization of the memory (QA02) | CALL + CH ▲ button on TV |
| Reset the count of operating protect circuit to "00" | CALL + CH ▼ button on TV |
| Turn off I2C bus communication | CALL + Volume + button on TV |
| "RCUT" selection | 1 button |
| "GCUT" selection | 2 button |
| "BCUT" selection | 3 button |
| "CNTX" selection | 4 button |
| "COLC" selection | 5 button |

| | |
|---|---|
| "UVTT" selection | 6 button |
| Automatic A/D Adjustment<br>(PC, Component, Composite (PAL, NTSC)) | 7 button |
| Self diagnostic display ON/OFF | 9 button |

## Selecting the Adjusting Item

Every pressing of CH ▲ button in the service mode changes the adjustment items in the order of table below. (▼ button for reverse order)

**SETTING & ADJUSTING DATA**

**[ SERVICE MODE ]**

**ADJUSTING ITEMS AND DATA IN THE SERVICE MODE:**

**Note:**

The image system data of RCUT-BDRV is different by each image format.
The PAL value is indicated in the table.
Never adjust H.POS and V.POS except PAL/WIDE mode.

| Item | Name of adjustment |
|---|---|
| RCUT | R CUT OFF |
| GCUT | G CUT OFF |
| BCUT | B CUT OFF |
| RDRV | R DRIVE |
| GDRV | G DRIVE |

| | |
|---|---|
| BDRV | B DRIVE |
| BRTC | BRIGHTNESS CENTER |
| COLC | COLOR CENTER |
| UVTT | BASE BAND TINT |
| CNTX | CONTRAST MAX |
| VOLUX | MAX VOLUME LIMITED |
| PLLW0 | PLL WAIT TIME |
| PLLW1 | PLL WAIT TIME |
| PLLW2 | PLL WAIT TIME |
| PLLW3 | PLL WAIT TIME |
| PLLW4 | PLL WAIT TIME |
| PLLW5 | PLL WAIT TIME |
| OPT1 | TV SET OPTION 1 |
| OPT2 | TV SET OPTION 2 |
| OPT3 | TV SET OPTION 3 |
| OPT4 | TV SET OPTION 4 (PANEL OPT DATA FOR VENDOR) |
| OPT5 | TV SET OPTION 5 (PANEL OPT DATA FOR SIZE) |
| OPT6 | TV SET OPTION 6 (HOTEL MODE) |
| OPT7 | TV SET OPTION 7 (HOTEL MODE) |
| OPT8 | TV SET OPTION 8 (HOTEL MODE) |
| TVOP | TV SET OPTION |
| ID | MODEL ID |
| BDWID | BORDER WIDTH FOR EXACT SCAN |
| BDHIT | BORDER HEIGHT FOR EXACT SCAN |
| FPLG | MASK_ENABLE (SD/HD) |
| FPLG2 | Channel LOGO Vector Clip SW (SD) |
| FPLG3 | Channel LOGO Vector Clip SW (HD) |

Factory preset data will be loaded after setting Model ID data.
(Refer to Initialization of Memory Data of QA02 and setting data of signal board.)

## Adjusting the Data

Pressing of VOLUME +/- button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

## I2C Bus Off

Turn off I2C communication between IC700 and IC400.

1) Press and hold the CALL button on the remote control, then press the Volume + button on the TV.

2) Display "BUS Off" OSD.

3) I2C communication turned off.

**Note:**

To return Bus on status, press and hold the CALL button on the remote control, then press the Volume + button on the TV again. TV will be turned off and automatically turned on, then status will be Bus On.

## Setting TVOP

Enter to service mode and select menu of TVOP by pressing P▲ or P▼ during display of adjustment menu. After selecting TVOP, press + or - to set I2C check function to disable or enable as below.

| TVOP | FUNCTION DESCRIPTION | 1 | 0 (Normal) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| D5 (bit5) | I2C check between IC700 and IC400. (WDT) | Disable | Enable |

## Setting Panel Option Data

Panel option data is subject to OP4 and OP5.
Enter to service mode and select menu of OPT4 or OPT5 by pressing P▲ or P▼ during display of adjustment menu. After selecting OPT4 or OPT5, press + or - to set OPT4 or OPT5 value as table below.

### Panel option data

| Series | | Model name | Panel vendor | OPT4 value | OPT5 value |
|---|---|---|---|---|---|
| A3000 | EU Digital/Ready | 26A3030D/A3000P | LPL | 0x01 | 0x03 |
| | | | IPS | 0x07 | 0x03 |
| | | 32A3030D/A3000P | LPL | 0x01 | 0x05 |
| | | | IPS | 0x07 | 0x05 |
| | | 37A3030D/A3000P | LPL | 0x01 | 0x06 |
| | | | IPS | 0x07 | 0x06 |
| | | 42A3030D/A3000P | LPL | 0x01 | 0x07 |

### OP4

Ex. OPT4 value 0x05 indicates that panel vendor is AUO AMVA.

| | | OPT4 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | D7 (bit7) | D6 (bit6) | D5 (bit5) | D4 (bit4) | D3 (bit3) | D2 (bit2) | D1 (bit1) | D0 (bit0) |
| Panel vendor | LPL | - | - | - | - | 0 | 0 | 0 | 1 |
| | SHP | - | - | - | - | 0 | 0 | 1 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CMO | - | - | - | - | 0 | 0 | 1 | 1 |
| | AUO PMVA | - | - | - | - | 0 | 1 | 0 | 0 |
| | AUO AMVA | - | - | - | - | 0 | 1 | 0 | 1 |
| | SAMSUNG | - | - | - | - | 0 | 1 | 1 | 0 |
| | IPS | - | - | - | - | 0 | 1 | 1 | 1 |

**OP5**

Ex. OPT5 value 0x05 indicates that panel size is 32.

| | | **OPT5** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **D7 (bit7)** | **D6 (bit6)** | **D5 (bit5)** | **D4 (bit4)** | **D3 (bit3)** | **D2 (bit2)** | **D1 (bit1)** | **D0 (bit0)** |
| Size | 32 | - | - | - | - | 0 | 1 | 0 | 1 |
| | 37 | - | - | - | - | 0 | 1 | 1 | 0 |
| | 42 | - | - | - | - | 0 | 1 | 1 | 1 |

## Convert from Bit (Binary) to Hex

The table for converting from bit (D7-D0) to hex (0x**).

| | | BIT (Binary) | | | |
|---|---|---|---|---|---|
| High nibble | | **D7** | **D6** | **D5** | **D4** |
| Low nibble | | **D3** | **D2** | **D1** | **D0** |
| HEX | **0** | 0 | 0 | 0 | 0 |
| | **1** | 0 | 0 | 0 | **1** |
| | **2** | 0 | 0 | **1** | 0 |
| | **3** | 0 | 0 | **1** | **1** |
| | **4** | 0 | **1** | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| **5** | 0 | **1** | 0 | **1** |
| **6** | 0 | **1** | **1** | 0 |
| **7** | 0 | **1** | **1** | **1** |
| **8** | **1** | 0 | 0 | 0 |
| **9** | **1** | 0 | 0 | **1** |
| **A** | **1** | 0 | **1** | 0 |
| **B** | **1** | 0 | **1** | **1** |
| **C** | **1** | **1** | 0 | 0 |
| **D** | **1** | **1** | 0 | **1** |
| **E** | **1** | **1** | **1** | 0 |
| **F** | **1** | **1** | **1** | **1** |

E.g. If Bit D7-0 = 0**1**0**1** **1**0**1**0, Hex data is 0x**5A**.

## Exit from Service Mode

Pressing POWER button to turn off the TV once.

## Initialization of Memory Data of QA02 and Setting Data of Signal Unit

After replacing QA02 or signal board, the following initialization is required.

**CAUTION: Never attempt to initialize the data unless QA02 has been replaced. Whenever using new signal board to the set, setting the Model ID data according to Panel option data.**

1) Enter the service mode.

2) Select menu of ID by pressing P▲ or P▼ during display of adjustment menu in the service mode.

3) Change ID data into MODEL ID to initialize by pressing + or -., refer to table below.

4) Press and hold the CALL button on the remote control, then press the CHANNEL ▲ button on the TV.

5) Initialization progress dialog including model name and panel vendor is shown.
Progress status is "WRITING".

6) Progress status is changed "OK" and power cycle (automatically). Then QA02 initialization has been completed.

7) Enter the service mode and select version check mode. Confirm if model name and model id set is correct. If not, repeat steps 1) to 6).

**Note:**

In case initialization by setting wrong MODEL ID is done, there is a possibility of abnormal display.

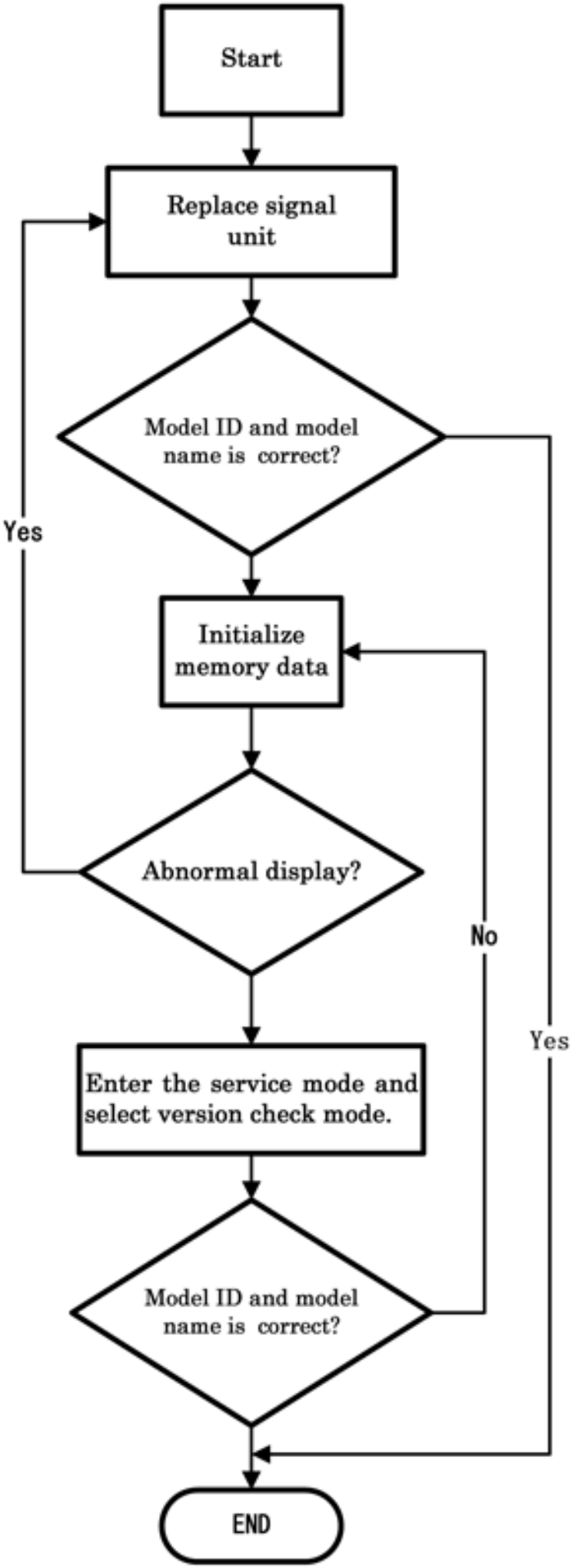
8) Set I2C check function of TVOP to enable.

9) Check the picture carefully. If necessary, adjust any adjustment item above.
Perform "Auto tune" on the owner's manual.

| MODEL ID (HEX) | Model name | Panel vendor |
|---|---|---|
| 0x01 | 26A3000P | LPL |
| 0x02 | 26A3000P | IPS |
| 0x03 | 32A3000P | LPL |
| 0x04 | 32A3000P | IPS |
| 0x05 | 37A3000P | LPL |
| 0x06 | 37A3000P | IPS |
| 0x07 | 42A3000P | LPL |
| 0x08 | 26A3030D | LPL |

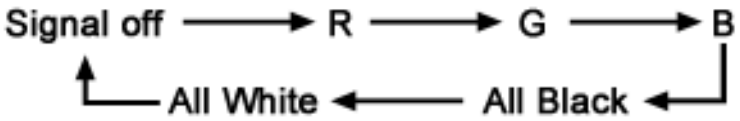
| | | |
|---|---|---|
| 0x09 | 26A3030D | IPS |
| 0x10 | 32A3030D | LPL |
| 0x11 | 32A3030D | IPS |
| 0x12 | 37A3030D | LPL |
| 0x13 | 37A3030D | IPS |
| 0x14 | 42A3030D | LPL |
| 0x15 | | |
| 0x16 | | |
| 0x17 | | |
| 0x18 | | |
| 0x19 | | |
| 0x20 | | |
| 0x21 | | |
| 0x22 | | |
| 0x23 | | |
| 0x24 | | |
| 0x25 | | |
| 0x26 | | |
| 0x27 | | |
| 0x28 | | |
| 0x29 | | |
| 0x30 | | |
| 0x31 | | |
| 0x32 | | |
| 0x33 | | |

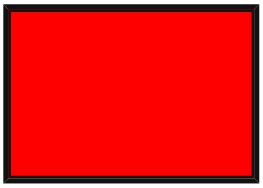
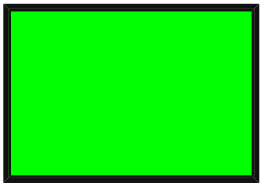
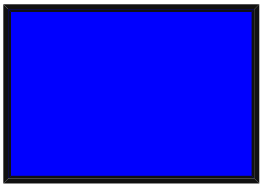
## Initializing Data setting flowchart after replacing the Signal Unit


Start
Replace signal unit
Model ID and model name is correct?
Yes
Initialize memory data
Abnormal display?
No
Yes
Enter the service mode and select version check mode.
Model ID and model name is correct?
END

## Test Signal Selection

Every pressing of ⊕ button on the remote control changes the built-in test patterns on screen as described below in Service Mode.




| Picture | Signal |
| --- | --- |
|  | Red raster |
|  | Green raster |
|  | Blue raster |
| | All Black |

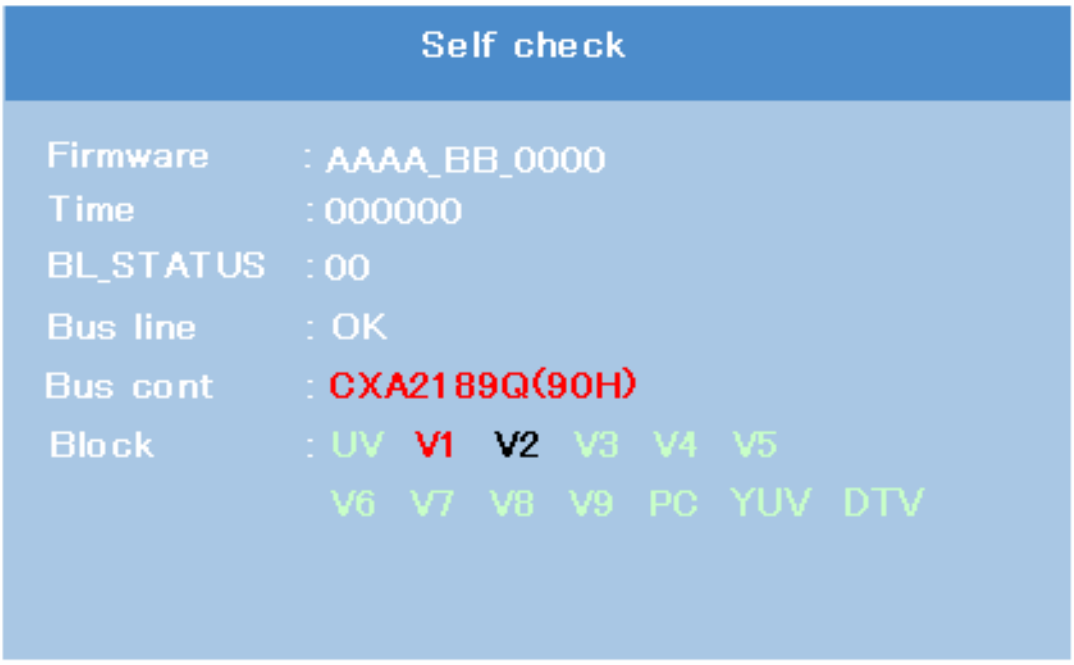
| | |
|---|---|
| | All White |

## Self Diagnostic Function

1. Press "9" button on remote control during display of adjustment menu in the service mode. The diagnosis will begin to check if interface among IC's is executed properly.

2. During diagnosis, the following displays are shown.

* Self check display and Item are subject to the models.


Self check
(1) Firmware : AAAA_BB_0000
(2) Time : 000000
(3) BL_STATUS : 00
(4) Bus line : OK
(5) Bus cont : CXA2189Q(90H)
(6) Block : UV V1 V2 V3 V4 V5
V6 V7 V8 V9 PC YUV DTV

(1) Firmware :
Version information of microprocessor
Series name (AAAA) and market area (BB) and software program version (0000)

(2) Time : Total hour of turn the TV on. (Unit : H)

(3) BL_STATUS :
Counter for saving BackLight on error.
This value is counted till 99 (Decimal).

(4) Bus line : -- "OK" is normal
SCL-GND (Red indication) : SCL-GND short circuit
SDA-GND (Red indication) : SDA-GND short circuit
SCL-SDA (Red indication) : SCL-SDA short circuit

(5) Bus cont : --- "OK" is normal.
NG is abnormal (Red indication).
When the abnormal status is detected, type name of semiconductor is indicated in red colour.

(6) Block
UV : TV reception mode
V1 - V9 : VIDEO 1-9 input mode
PC : PC mode
YUV : YUV mode
DTV : DTV mode

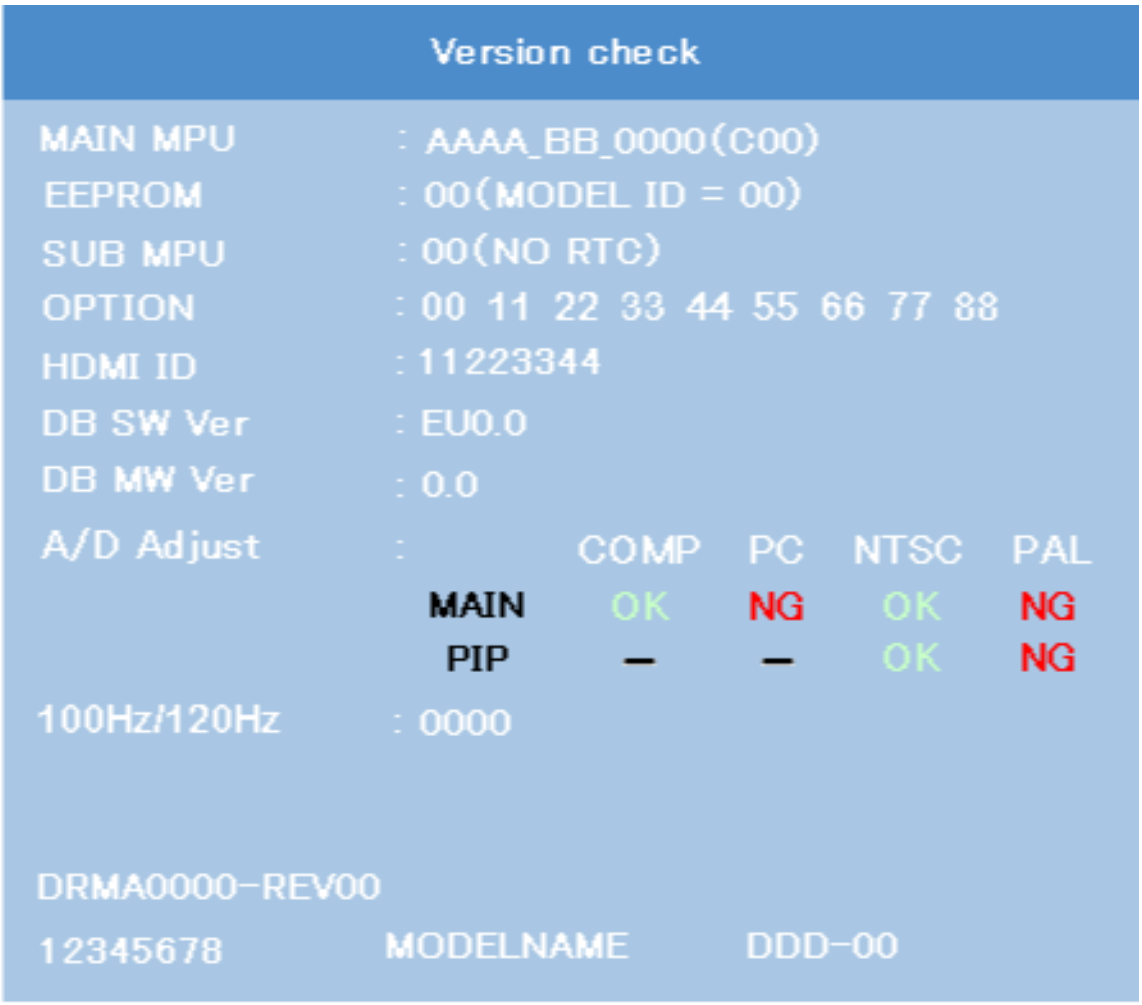
| | |
|---|---|
| UV | RF |
| V1 | 1 (SCART (FULL)) |
| V2 | 2 (SCART (S+AV)) |
| V3 | 3 (Component/Composite) |
| V4 | HDMI1 |
| V5 | -- |
| V6 | -- |
| V7 | -- |
| V8 | -- |
| V9 | -- |
| PC | PC |
| YUV | -- |
| DTV | -- |

## Version Check Mode

1. Press "9" button twice on remote control during display of adjustment menu in the service mode. The version of main MPU will be checked.

2. During Version Check, the following displays are shown.

* Version check display and Item are subject to the models.


Version check
(1) MAIN MPU : AAAA_BB_0000(C00)
(2) EEPROM : 00(MODEL ID = 00)
(3) SUB MPU : 00(NO RTC)
(4) OPTION : 00 11 22 33 44 55 66 77 88
(5) HDMI ID : 11223344
(6) DB SW Ver : EU0.0
(7) DB MW Ver : 0.0
(8) A/D Adjust : COMP PC NTSC PAL
MAIN OK NG OK NG
PIP — — OK NG
(9) 100Hz/120Hz : 0000
(10) DRMA0000-REV00
(11) 12345678 MODELNAME DDD-00
(12)
(13)

(1) MAIN MPU :
Version information of microprocessor
Series name and Code Program Version (4 figure number) and OSD Version (2 figure number).

(2) EEPROM :

Version information of EEPROM : Display 1 byte data.

(3) SUB MPU :

Version information of SUB MPU : Display 1 byte data.

(4) OPTION :

Option information : Display six numbers of 1 byte data.

(5) HDMI ID :

HDMI ID information : Display 4 byte data.

(6) SW Ver

Version information of DB software as Toshiba release. (Only digital model.)

(7) MW Ver

Left side is Application and UI version information of DB software. (Only digital model.)

Right side is Firmware (Driver) version information of DB software. (Only digital model.)

(8) A/D Adjust

A/D adjustment item.

--MAIN : It's enable only in double Window model. A/D adjustment status of main picture.

--PIP : It's enable only in double Window model. A/D adjustment status of sub picture.

--COMP : Component input

--PC : PC input

--NTSC : NTSC (60 Hz) SD signal (composite input).

--PAL : PAL (50 Hz) SD signal (composite input).

--OK : A/D adjustment set correctly.

--NG : A/D adjustment set incorrect.

-- : A/D adjustment is not needed. Because its picture format isn't used.

(9) 100 Hz FPGA Software Version

It's enable only in 100 Hz drive panel model.

Upper 2 figure number means function versions of double frequency convert.

Lower 2 figure number means function version of vector complement.

(10) Memory Data Version

Version information of EEPROM.

DRMA**** means model number of EEPROM.

REV** means version of EEPROM.

(11) CD number

CD information (ascii code). : Display 4 byte data.

(12) Model Name

Model name information (ascii code). : Display 7 byte data.

(13) LCD Panel Vendor information display

The following Panel Vendor (DDD) and screen size (00) are displayed.

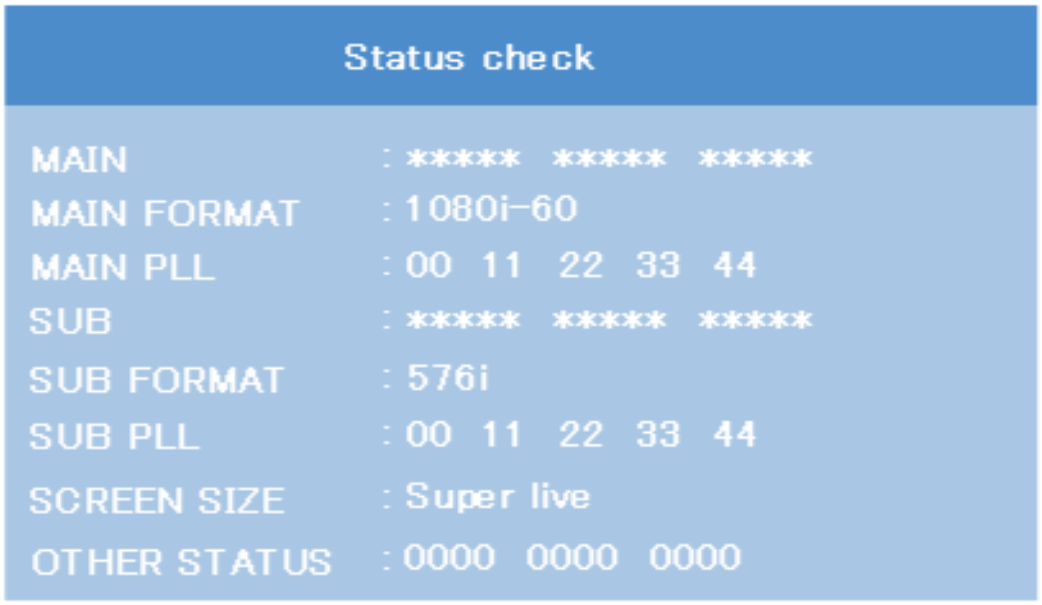
Example : AUO-32 indicates that Vendor is AUO and Screen Size is 32 inch

## Status Check Mode

1. Press "9" button thrice on remote control during display of adjustment menu in the service mode. The status of this model will be checked.

2. During Status Check, the following displays are shown.

* Status check display and Item are subject to the models.


Status check
(1) MAIN : ***** ***** *****
(2) MAIN FORMAT : 1080i-60
(3) MAIN PLL : 00 11 22 33 44
(4) SUB : ***** ***** *****
(5) SUB FORMAT : 576i
(6) SUB PLL : 00 11 22 33 44
(7) SCREEN SIZE : Super live
(8) OTHER STATUS : 0000 0000 0000

(1) MAIN :

Main source information :

Display RF position number (0 - 99) on the main screen, or Input Source (EXT1/2/3/HDMI etc.)

(2) MAIN FORMAT :

Display Video and PC format information

(3) MAIN PLL :

Main PLL information : Display 1 byte data at five.

(4) SUB :

Sub source information :

Display RF position number (0 - 99) on the Sub screen, or Input Source (EXT1/2/3/HDMI etc.)

This item displays only Double window model.

(5) SUB FORMAT :

Display Video and PC format information

This item displays only Double window model.

(6) SUB PLL :

Sub PLL information : Display 1 byte data at five.

This item displays only Double window model.

(7) SCREEN SIZE :

Display the screen size as follows.

| |
|---|
| Exact Scan |
| Wide |
| Super Live 2 |
| Cinema 2 |
| 4:3 |
| Super Live 1 |
| Cinema 1 |
| Subtitle |
| 14:9 |

**Note:**

Exact Scan is shown only for 1080p panel model with video input mode except pc.

(8) OTHER STATUS :

Other status information : Display three numbers of 2 byte data.

## Setting Hotel Mode

Enter to service mode and select Hotel Mode menu by pressing P▲ or P▼.
After selecting Hotel Mode, press ◿+ to enter details setting in Hotel Mode.

To select menu, press P▲ or P▼ and press OK to enter the adjustment menu of table bellow.
To move the cursor in the adjustment, press ◿+ or ◿-.

1. By pressing P▲ or P▼, OPT2 setting will change the value either 1 or 0 on selected items as follows;

**OP2**

| OPT2 | FUNCTION DESCRIPTION | 1 | 0 (Normal) |
|---|---|---|---|
| D7 (bit7) | - (no use) | - | - |
| D6 (bit6) | - (no use) | - | - |
| D5 (bit5) | FRONT Key | Disable | Enable |
| D4 (bit4) | All keys except input selector key (Video/TV) | Disable | Enable |
| D3 (bit3) | User remote control operation | Disable<br>(Service mode and Supere User mode may possible to setting only) | Enable |
| D2 (bit2) | Disable SET UP MENU except language. (tuning SETUP MENU) | Disable<br>(Display the language only) | Enable |
| D1 (bit1) | Disable SETUP MENU | Disable | Enable |
| D0 (bit0) | HOTEL Mode | On (Enable the setting of D1 from to D7) | Off (Normal) |

**VOLUX**

Set VOLUX as following.

1) Set speaker volume to 100. (Any value is OK, but 100 is better to check sound level.)

2) Down value of VOLUX until finding suitable sound volume level.

| VOLUX | FUNCTION DESCRIPTION | 1 | 0 (Normal) |
|---|---|---|---|
| D7 (bit7) ~ D0 (bit0) | Max Limiter of Volume Control | 0x00 ~ 0x7F (Normal: 0x7C) | |

**OP6**

| OPT6 | FUNCTION DESCRIPTION | 1 | 0 (Normal) |
|---|---|---|---|
| D7 (bit7) | Enable mode that POS or VIDEO program number will be appeared in forced when turn ON the main power | Enable | Disable |
| D6 (bit6) ~ D0 (bit0) | POS or VIDEO program number | 0 ~ 127 [decimal] (Normal: 0)<br>POS number: 0 ~ 99<br>VIDEO number: 100 ~ 127<br>(DTV = 100, VIDEO = 101, VIDEO = 102..)<br>100 is used as ATV when DTV option is disable. | |

**OP7**

| OPT7 | FUNCTION DESCRIPTION | 1 | 0 (Normal) |
|---|---|---|---|
| D7 (bit7) | Enable mode that speaker volume will be set in forced when turn ON the main power | Enable | Disable |
| D6 (bit6) ~ D0 (bit0) | Forced speaker volume | 0 ~ 100 [decimal] (Normal: 0)<br>Value above 100 is no effect. | |

**OP8**

| OPT8 | FUNCTION DESCRIPTION | 1 | 0 (Normal) |
|---|---|---|---|
| D7 (bit7) ~ D3 (bit3) | - (no use) | - | - |

| | | | |
|---|---|---|---|
| D2 (bit2) | Enable mode that picture mode will be set in forced when turn ON the main power | Enable<br>(Display the language only) | Disable |
| D1 (bit1) ~ D0 (bit0) | Forced picture mode | 0 [dec]: Dynamic (mode-1) (Normal)<br>1 [dec]: Standard (mode-2)<br>2 [dec]: Mild (mode-3)<br>3 [dec]: Memory (mode-M) | |

## LED Indication

The Green and Red LEDs on the TV (at the bottom center of the TV) indicate the TV's status, as described below.

- Red ON (solid) and Green OFF = The TV power cord is plugged in.
- Green ON (solid) and Red ON = The On timer is operating.

| | LED Indication | Condition | Solution |
|---|---|---|---|
| 1 | Green is OFF;<br>Red blinks continuously at 0.5-second intervals. | Abnormal operation | Turn OFF the TV and unplug the power cord.<br>Plug the power cord in again and turn ON the TV. |
| 2 | Green is OFF;<br>Red blinks continuously at 1-second intervals. | Abnormal operation of BUS line. | Turn OFF the TV and unplug the power cord.<br>Plug the power cord in again and turn ON the TV. |

# PANEL IDENTIFICATION

## Panel Identification

If the several panels are alternatively used in the same model without amending the model name, the identification marking will be shown at the last digit of the set serial number on the specification label on the back cover.

**In servicing, do not alter the panel because several setting and parts are different.**

| Marking | Panel Vendor | Marking | Panel Vendor | Marking | Panel Vendor |
|---|---|---|---|---|---|
| A | AUO | J | | S | SHARP |
| B | | K | SAMSUNG | T | |
| C | CMO | L | LPL | U | |
| D | | M | | V | |
| E | | N | | W | |
| F | | P | | X | |
| G | | Q | | Y | |
| H | IPS | R | | Z | |

**With this alternative use, some of key parts may differ and their combinations are indicated with the suffix marking on the location number in the part list (Miscellaneous).**

**e.g.**

| Location No. | Part No. | Description |
|---|---|---|
| **B001A** | 75007869 | LCD Panel, 32" LPL |
| **B001B** | 75007870 | LCD Panel, 32" AUO |
| **MZ01A** | 75006036 | LDVS Cable |
| **MZ01B** | 75007893 | LDVS Cable |

# PARTS LIST

## Precaution

**WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" FOR DIRECT VIEW CTV ONLY, "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" OF THIS MANUAL.**

**CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.**

**The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the SAFETY PRECAUTION and PRODUCT SAFETY NOTICE.**

**Do not degrade the safety of the receiver through improper servicing.**

### Note:

- The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.
- The PC board assembly with ✱ mark is no longer available after the end of the production.

### Abbreviations

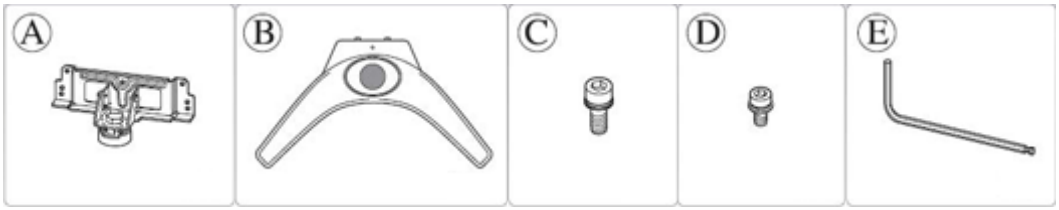
| | | | |
|---|---|---|---|
| Capacitors | CD | : | Ceramic Disk |
| Resistors | CF | : | Carbon film |
| | OMF | : | Oxide Metal Film |
| | PF | : | Plastic Film |
| | CC | : | Carbon Composition |
| | VR | : | Variable Resistor |
| | EL | : | Electrolytic |

MF : Metal Film
FR : Fusible Resistor

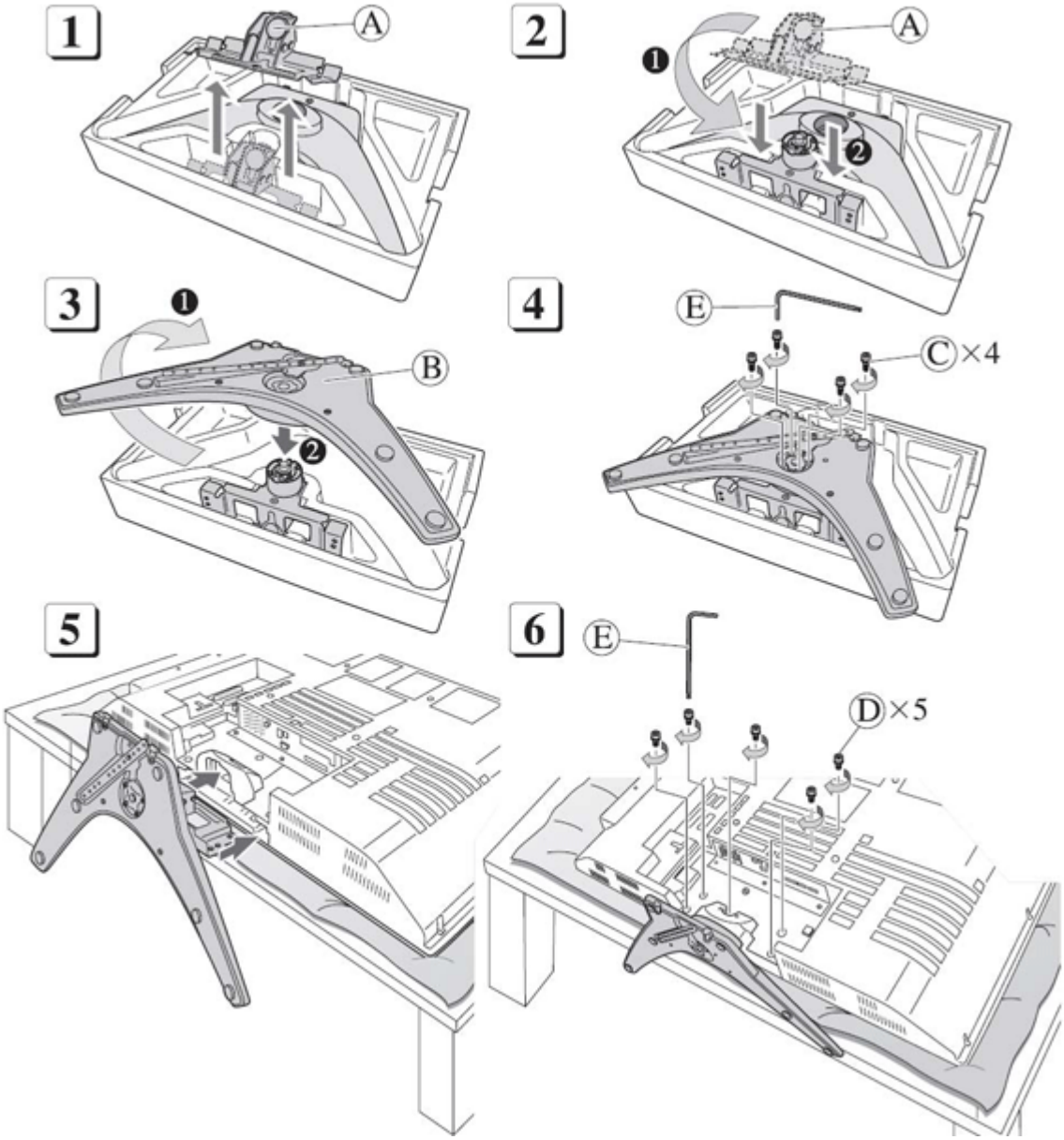
All CD and PF capacitors are ±5 %, 50 V and all resistor, ±5 %, 1/6 W unless otherwise noted.

# CABINET

## Stand Exploded View




A425 A426 A427 A428 A429



# FUNCTION AND OPERATION

## The Remote Control

Simple at-a-glance reference of your remote control.

*To mute the sound*

*For On/Standby mode*

*Number buttons*

*To select input from external sources, **analogue** or **digital** TV*

*To return to the previous programme*

*To display the **digital** on-screen Programme Guide*

*To switch between TV, Radio and Favourite programmes when in **digital** mode*

*On-screen Menus*

*To exit Menus*

*When using menus the arrows move the cursor on the screen up, down, left or right. **OK** to confirm your selection*

*To change programme positions and text pages*

*To alter the volume*

*To select mode*

*To display **digital** on-screen information*

*Selectable picture preferences*

*To call up text services in **analogue** mode and interactive services in **digital** mode*

*Widescreen viewing*

**When using a TOSHIBA VCR or DVD:**

*press* II/I▶ to PAUSE/STEP
*press* ▶ to PLAY
*press* ◀◀ to REWIND
*press* ▶▶ to FAST FORWARD
*press* ▲ to EJECT
*press* ■ to STOP
*press* I◀◀ to SKIP-REWIND
*press* ▶▶I to SKIP-FORWARD

**When in TV mode:**

▼ *Still picture*
CD I/II *Stereo/bilingual transmissions*
SUBTITLE *Digital Subtitles*
⏲/✉ *Time display*

**When using the Programme Guide:**

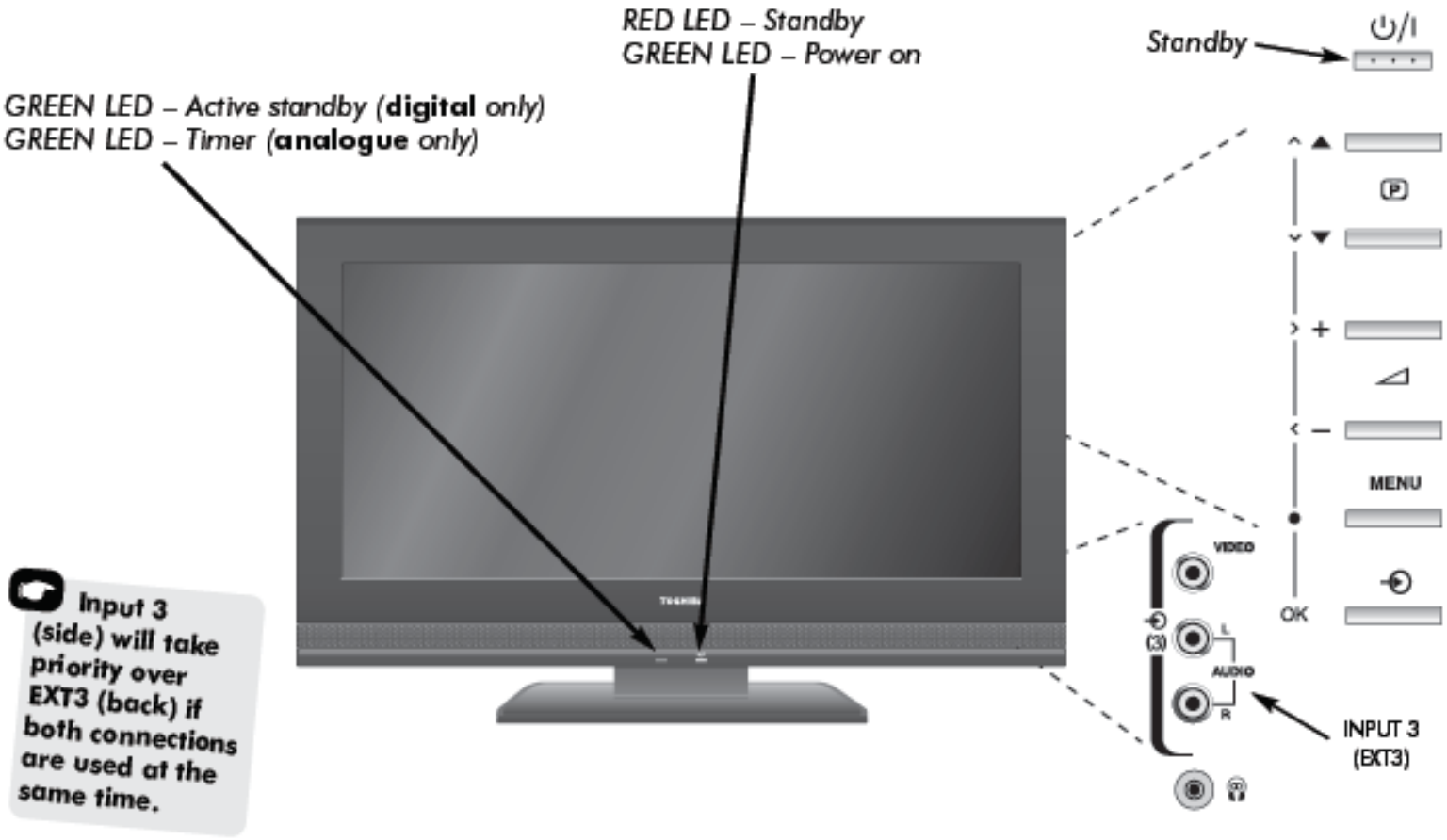
I◀◀ *– 24 hours*
▶▶I *+ 24 hours*
◀◀ *– 1 page*
▶▶ *+ 1 page*

*Text and interactive service control buttons*

# FUNCTION AND OPERATION

## Controls and Input Connections

A wide variety of external equipment can be connected to the input sockets on the side of the television. Whilst all the necessary adjustments and controls for the television are made using the remote control, the buttons on the television may be used for some functions.




### Switching On

If the RED LED is unlit check that the mains plug is connected to the power supply. If the picture does not appear press ⏻ on the remote control, it may take a few moments.

To put the television into Standby press ⏻ on the remote control, the GREEN active standby LED will appear (see *'Software Upgrade' section*) next to the RED for a few moments then disappear. To view the television press ⏻ again. The picture may take a few seconds to appear.

## Using the Remote Control

Press the **MENU** button on the remote control to see the menus.

In **digital** mode the menu bar at the top of the screens will show three different topics shown in symbols. As each symbol is selected by pressing the ❮ or ❯ button on the remote control, its respective options will appear below.

In **analogue** mode the menu appears as a list of five topics. As each symbol is selected by pressing the ❮ or ❯ button on the remote control, its respective options will appear below.

To use the options press the ^ and ⌄ button on the remote control to move up and down through them and **OK**, ❮ or ❯ to select the required choice. Follow the on screen instructions. The functions of each menu are described in detail throughout the manual.

## Using the Controls and Connections

To alter the volume press — ◿ +.

To alter the programme position press ▼ Ⓟ ▲.

Press **MENU** and ❮, ❯, ⌄ or ^ to control the sound and picture options.

Press **MENU** twice to finish.

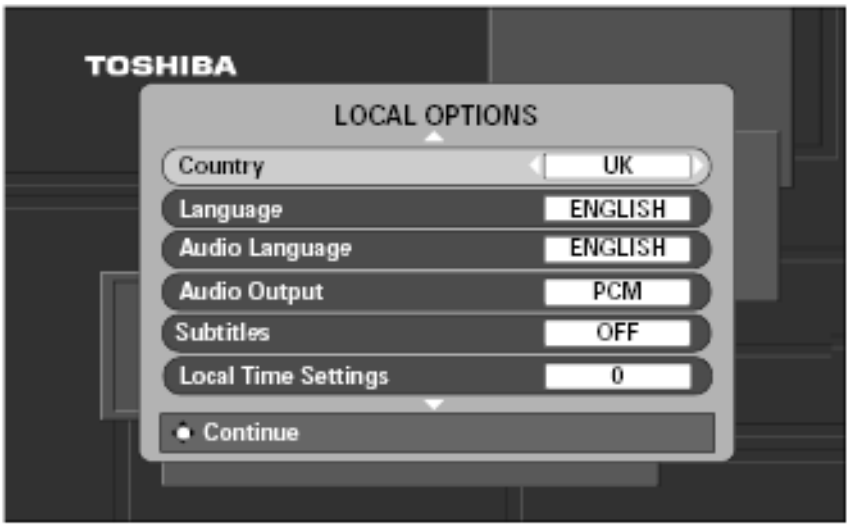
When connecting sound equipment to **EXT3**, connect the audio output of the equipment to the phono sockets on the television.

To select the Input, press ⊕ until the display shows **EXT3** as described. The television will automatically sense the type of signal.

## Tuning Digital Television for the First Time

Before switching on the television put your decoder and media recorder to **Standby** if they are connected and ensure the aerial is connected. To set up the television use the buttons on the remote control.

1. Press the ⏻ button, the **LOCAL OPTIONS** screen will appear. This screen will appear the first time that the television is switched on and each time the television is reset.



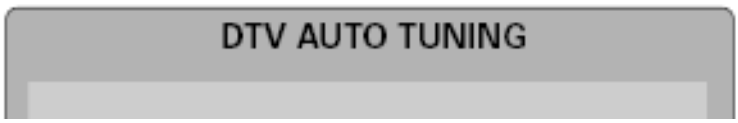

2. Press ❯ to highlight **Country** and ❮ or ❯ to select. The television will now tune the stations for your country.

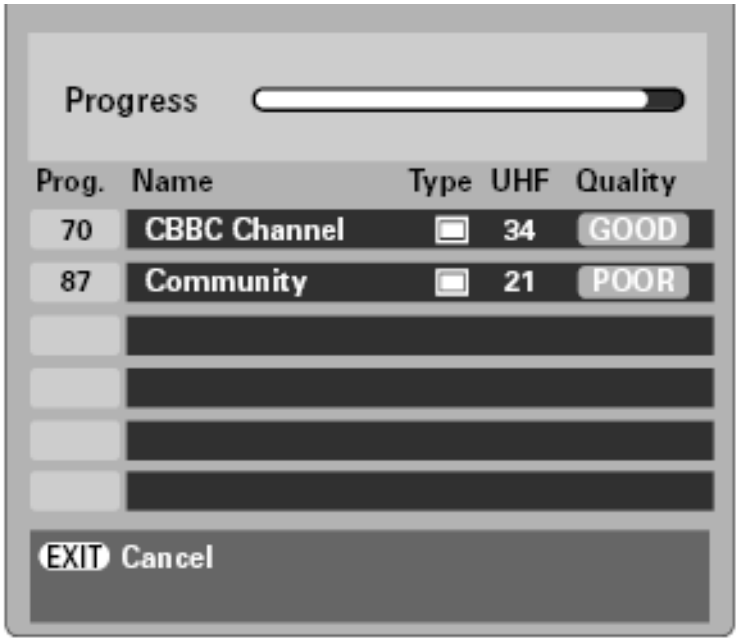
3. Using ❯ highlight **Language**, then ❮ or ❯ to select.

4. Press **OK** to start tuning.

   The **DTV AUTO TUNING** screen will appear and the television will start to search for available stations. The progress bar will move along the line.

   ***You must allow the television to complete the search.***






When the search is complete the television will automatically select programme one.

The **DTV AUTO TUNING** screen will display the total number of services found.

DTV AUTO TUNING
88 programmes found
53 TV 27 Radio 8 Text
Press OK to watch programme
Prog. Name Type UHF Quality
1 BBC ONE 34 GOOD
2 BBC TWO 34 GOOD
3 ITV1 31 GOOD
4 Channel 4 31 POOR
5 Five 48 GOOD
6 ITV2 31 POOR
Change Watch
Page Up Page Down Sort

**5** Use ⌄ or ⌃ to move through the list to select a programme then press **OK** to view.

**NOTE:** The time will be set automatically by transmission but can be advanced or decreased by up to 3 hours using **Local Time Settings**.

## Digital Auto Tuning

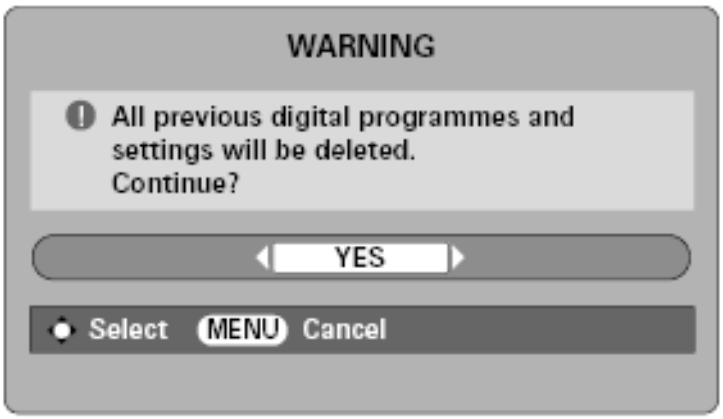
**Note:** As new services are broadcast it will be necessary to re-tune the television in order to view them.

### Auto Tuning

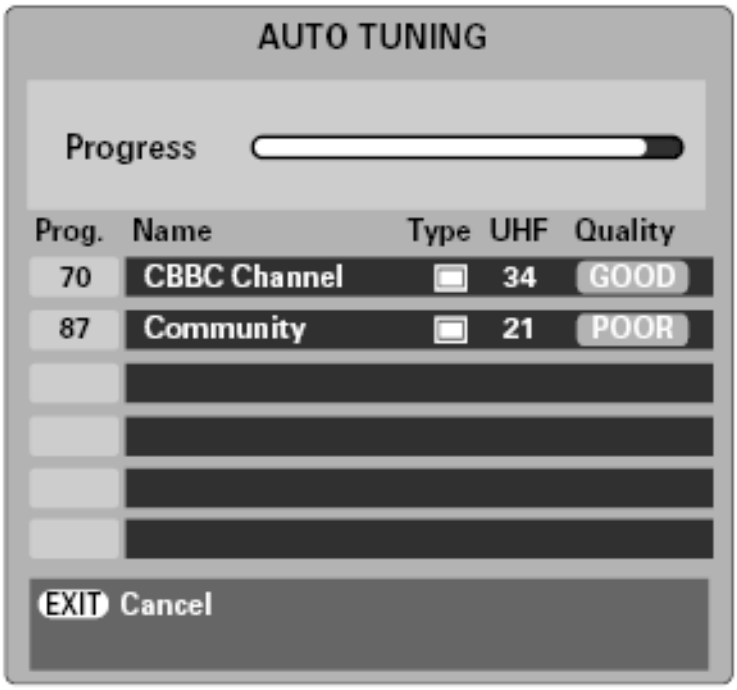
**Auto tuning** *will completely re-tune the television and can be used to up date the channel list.* ***It is recommended that Auto tuning is run periodically to ensure that all new services are added.*** *All current programmes and settings, i.e. favourites and locked programmes, will be lost.*

1. Press **MENU**, the **SETUP MENU** will appear. Use ❯ to highlight **Auto tuning**. Press **OK**.

2. A screen will appear warning that previous digital programmes and settings will be deleted. Press **OK** to continue with the **Auto tuning**.

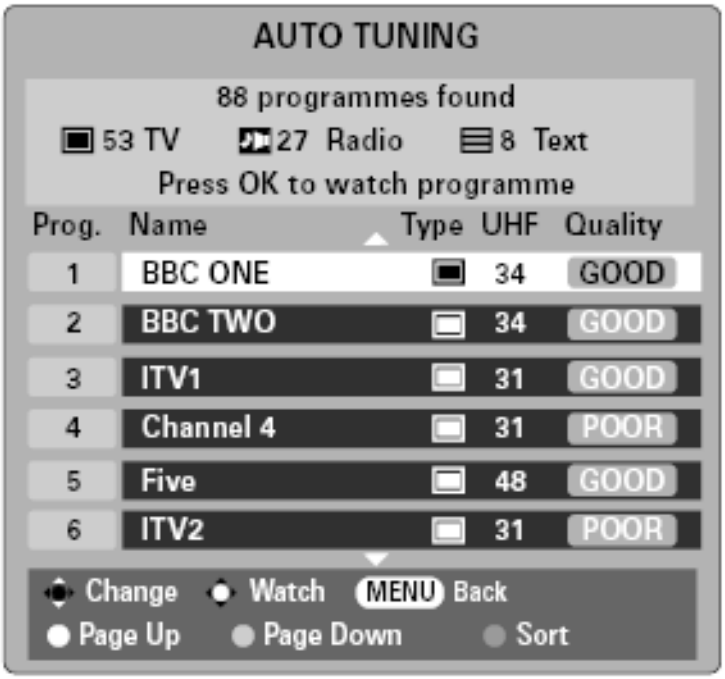


The television will start to search for all available stations.




***You must allow the television to complete the search.***

When the search is complete the **AUTO TUNING** screen will display the total number of services found.


AUTO TUNING
88 programmes found
53 TV 27 Radio 8 Text
Press OK to watch programme
Prog. Name Type UHF Quality
1 BBC ONE 34 GOOD
2 BBC TWO 34 GOOD
3 ITV1 31 GOOD
4 Channel 4 31 POOR
5 Five 48 GOOD
6 ITV2 31 POOR
Change Watch MENU Back
Page Up Page Down Sort

3 Use ⌄ or ⌃ to move through the list to select a programme then press **OK** to view.

## Digital Programme Sorting, Manual Tuning

**Note:** When the television is switched off the mode being viewed at the time will automatically be selected when the television is switched back on.

### Programme Sorting

1. The station order may be changed to suit personal preference. Press **MENU**, the **SETUP MENU** will appear on screen.

2. Use ❯ to move down through the list and highlight **Programmes**. Press **OK**.

3. With the list of stations now showing use ❯ or ❮ to highlight the station you want to move and press ❯.

The selected station will be moved to the right of the screen.

4 Use ❯ or ❮ to move through the list to your *preferred* position. As you do so the other stations will move to make room.

5 Press ❬ to store your move. Repeat as necessary, then press **EXIT**.

## Manual Tuning

*This feature is available for service engineers or can be used for direct channel entry if the multiplex channel is known.*

1 Select **Manual tuning** from the **SETUP MENU** and press **OK**.

2 Enter the multiplex number using the number buttons and then press **OK**. The television will automatically search for that multiplex.

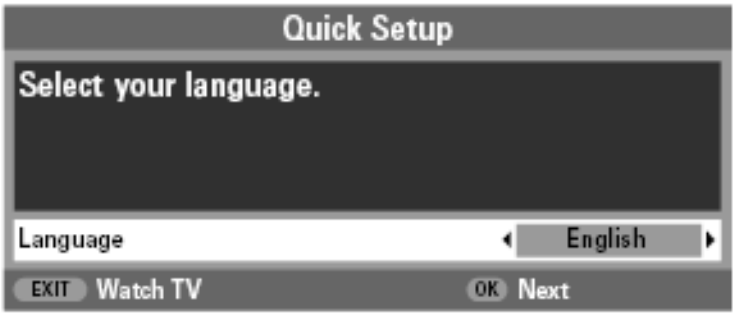
When the multiplex is found any channels not currently on the programme list will be added and the programme information at the top of the screen will be updated.

3 Repeat as necessary. Press **EXIT** to finish.

## Tuning Analogue Mode for the First Time

The **Quick Setup** feature will tune all **analogue** channels currently available in the area. To put the television into **ATV** mode press the ⊕ button then use ^ or v to select **ATV**.

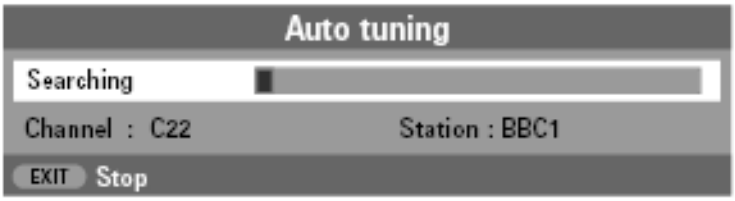
1. Select **ATV** mode. The **Quick Setup** screen will appear.




2. Using ❮ or ❯ select your **language**, then press **OK**.

3. Then press ❮ or ❯ to select your **country**.

4. To start **Auto tuning** press **OK**.

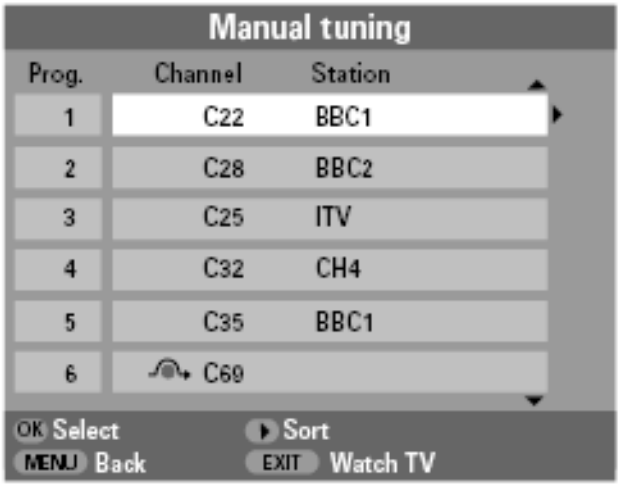



5. The search will begin for all available stations. The slide bar will move along the line as the search progresses.

***You must allow the television to complete the search.***

When the search is complete the television will automatically select programme position 1. This may not be a clear picture or the signal may be

automatically select programme position 1. This may not be a clear picture or the signal may be weak, so the station order may be changed using **Manual tuning** which will appear on the screen (*see the* **analogue** *'Sorting programme positions' section*).

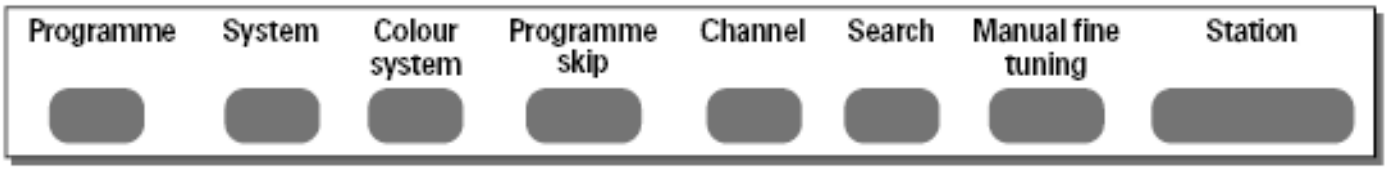



**6** Use ❯ or ❮ to move through the list to select a programme then press **EXIT** to view.

## Analogue Manual Tune

The television can be tuned-in manually using **Manual tuning**. For example: if the television cannot be connected to a media recorder/decoder with a SCART lead or to tune-in a station on another **System**.

Use ❮ and ❯ to move across the screen and select any of these Manual Tune options.




**Programme** : **The number to be pressed on the remote control.**

**System** : **Specific to certain areas.**

**Colour system** : **Factory set to Auto, should only be changed if problems are experienced, i.e. NTSC input from external source.**

**Programme skip** : **means nothing has been stored or the facility to skip the channel is ON.**

**Channel** : **The channel number on which a station is being broadcast.**

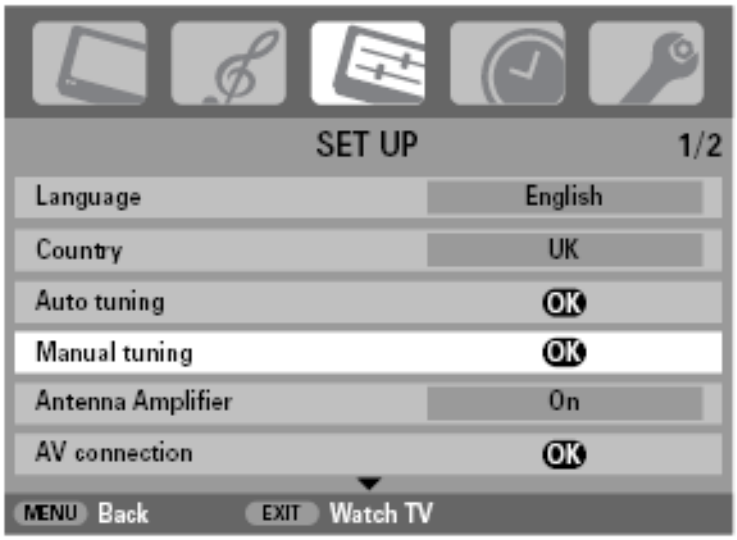
**Search** : **Search up and down for a signal.**

**Manual fine tuning** : **Only used if interference/weak signal is experienced.**

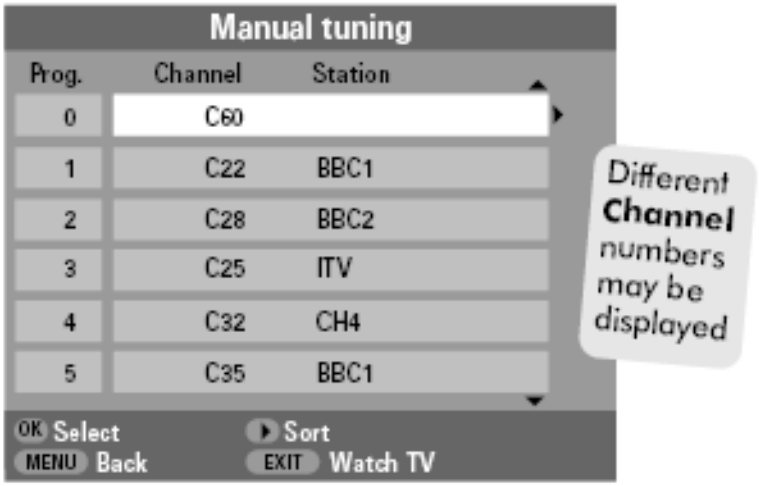
**Station** : **Station identification. Use the ^ or v and ❮ or ❯ buttons to enter up to seven characters.**

To allocate a programme position on the television for a decoder and media recorder: turn the decoder on, insert a pre-recorded film in the media recorder and press PLAY, then manually tune.

**1** Press **MENU** and using ❮ or ❯ select the **SET UP** menu, with ❯ highlight ***Manual tuning***, press **OK** to select.




**2** Use ❮ or ❯ to highlight the programme position required e.g. we suggest ***Prog. 0*** for a media recorder.



**3** Press **OK** to select. If the programme is skipped, **Programme skip** must be removed before storing.

**4** Press ❯ to select **System** and use ❮ or ❯ to change if required.

**5** Then press ❯ to select **Search**.

**6** Press ❮ or ❯ to begin the search. The search symbol will flash.

**7** Each signal will show on the television, if it is not your media recorder, press ❮ or ❯ again to restart the search.

**8** When your media recorder signal is found, press ❯ to move along to **Station**. With ❮, ❯, ❮ and ❯ put in the required characters, e.g. **VCR**.

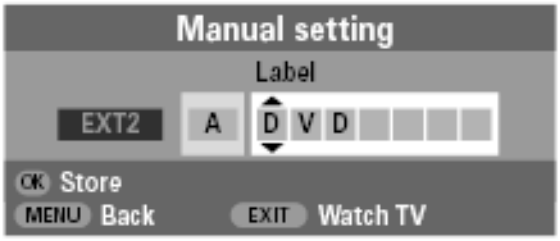
**9** Press **OK** to store.

**10** Repeat for each ***programme position*** you want to tune or, press **MENU** to return to the list of channels and select the next number to tune.

**11** Press **EXIT** when you have finished.

**12** To name external equipment, e.g. DVD on EXT2, press ⊕ to select ⊕**2**, then select **Manual setting** from the **SET UP** menu.

**13** Press ❯ to select **Label** then using ❮, ❯, ❮ and ❯ put in the required characters. Press **OK**.




**PLEASE NOTE** This television has direct channel entry if the channel numbers are known. Select the **Manual tuning** screen in ***Step 3***. Enter the **Programme number**, the **System**, then **C** for standard (terrestrial) channels or **S** for cable channels and the **Channel** number. Press **OK** to store.

# Auto Tune

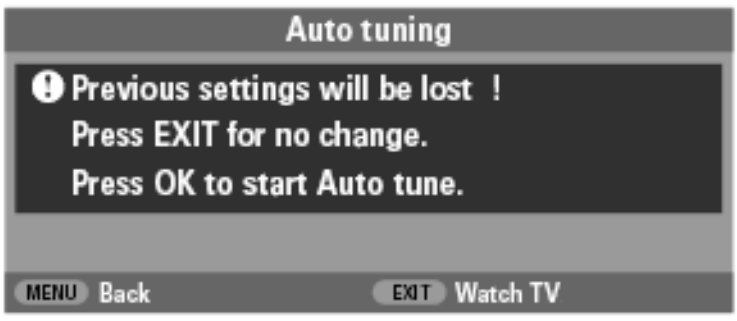
## Using Auto Tuning

1 To set up the television using **Auto tuning**, press **MENU** and use ❮ or ❯ to select the **SET UP** menu.

2 Press ❯ to highlight **Language** and ❮ or ❯ to select.

3 Using ❯ highlight **Country**, then ❮ or ❯ to select. The television will now tune the stations for your country.

4 Press ❯ to highlight **Auto tuning**, then press **OK**.




5 To start **Auto tuning** press **OK**.

**5** To start **Auto tuning** press **OK**.

***You must allow the television to complete the search.***

When the search is complete the television will automatically select programme position 1. This may not be a clear picture, so the station order can be changed *(see 'Sorting programme positions' section)*.

# SAFETY INSTRUCTION

## Handling the LCD Module

### Safety Precaution

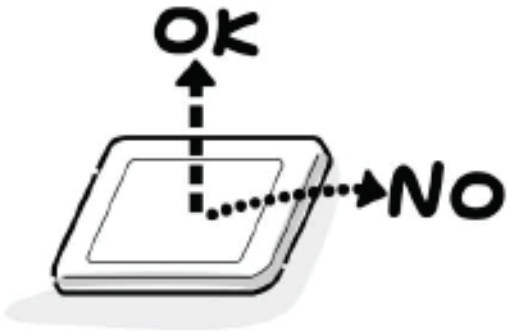
In the event that the screen is damaged or the liquid crystal (fluid) leaks, do not breathe in or drink this fluid.
Also, never touch this fluid. Such actions could cause toxicity or skin irritation. If this fluid should enter the mouth, rinse the mouth thoroughly with water. If the fluid should contact the skin or clothing, wipe off with alcohol, etc., and rinse thoroughly with water. If the fluid should enter the eyes, immediately rinse the eyes thoroughly with running water.

### Precautions for Handling the LCD Module

**CAUTION: The metal edges of the LCD module are sharp, handle it with care.**

The LCD module can easily be damaged during disassembly or reassembly; therefore, always observe the following precautions when handling the module.

1. When attaching the LCD module to the LCD cover, position it appropriately and fasten at the position where the display can be viewed most conveniently.




2. Carefully align the holes at all four corners of the LCD module with the corresponding holes in

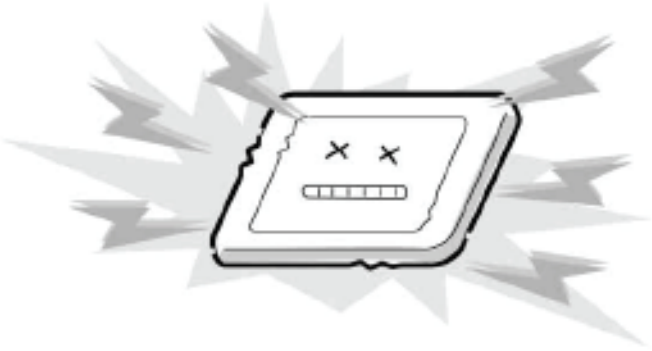
the LCD cover and fasten with screws. Do not strongly push on the module because any impact can adversely affect the performance. Also use caution when handling the polarized screen because it can easily be damaged.

3. If the panel surface becomes soiled, wipe with cotton or a soft cloth. If this does not remove the soiling, breathe on the surface and then wipe again.
   If the panel surface is extremely solied, use a CRT cleaner as a cleaner. Wipe off the panel surface by drop the cleaner on the cloth. Do not drop the cleaner on the panel. Pay attention not to scratch the panel surface.

4. Leaving water or other fluids on the panel screen for an extended period of time can result in discoloration or stripes. Immediately remove any type of fluid from the screen.

5. Glass is used in the panel, so do not drop or strike with hard objects. Such actions can damage the panel.

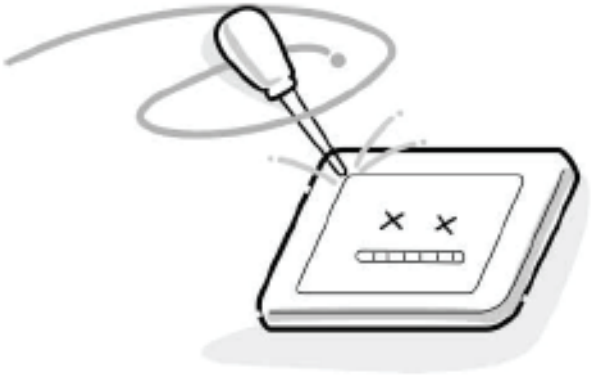
6. CMOS-LSI circuitry is used in the LCD module, so avoid damage due to static electricity. When handling the module, use a wrist ground or anchor ground.



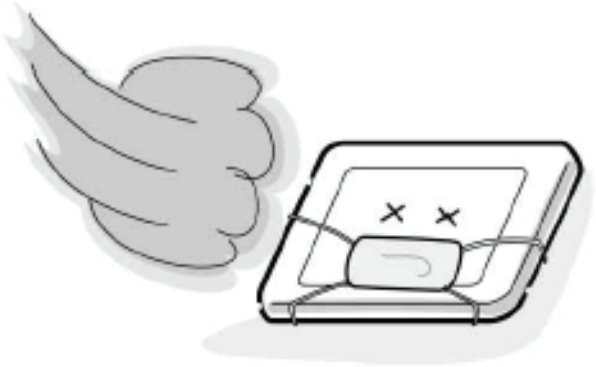
7. Do not expose the LCD module to direct sunlight or strong ultraviolet rays for an extended period of time.

8. Do not store the LCD module below the temperature conditions described in the specifications. Failure to do so could result in freezing of the liquid crystal due to cold air or loss of resilience or other damage.

9. Do not disassemble the LCD module. Such actions could result in improper operation.



10. When transporting the LCD module, do not use packing containing epoxy resin (amine) or silicon resin (alcohol or oxim). The gas generated by these materials can cause loss of polarity.



# PANEL IDENTIFICATION

## Panel Identification

If the several panels are alternatively used in the same model without amending the model name, the identification marking will be shown at the last digit of the set serial number on the specification label on the back cover.

**In servicing, do not alter the panel because several setting and parts are different.**

| Marking | Panel Vendor | Marking | Panel Vendor | Marking | Panel Vendor |
|---|---|---|---|---|---|
| A | AUO | J | | S | SHARP |
| B | | K | SAMSUNG | T | |
| C | CMO | L | LPL | U | |
| D | | M | | V | |
| E | | N | | W | |
| F | | P | | X | |
| G | | Q | | Y | |
| H | IPS | R | | Z | |

**With this alternative use, some of key parts may differ and their combinations are indicated with the suffix marking on the location number in the part list (Miscellaneous).**

**e.g.**

| Location No. | Part No. | Description |
|---|---|---|
| B001A | 75007869 | LCD Panel, 32" LPL |
| B001B | 75007870 | LCD Panel, 32" AUO |
| MZ01A | 75006036 | LDVS Cable |
| MZ01B | 75007893 | LDVS Cable |

# SPECIFICATION

| DVB-T Broadcast systems/channels | | Broadcast systems/channels | |
|---|---|---|---|
| UK | UHF 21-68 | PAL-I | UHF UK21-UK69 |
| France | VHF 05-10 (VHF 01-05)<br>UHF 21-69 | PAL-B/G | UHF E21-E69<br>VHF E2-E12, S1-S41 |
| Germany | VHF 05-12<br>UHF 21-69 | SECAM-L | UHF F21-F69<br>VHF F1-F10, B-Q |
| Austria | VHF 05-12<br>UHF 21-69 | SECAM-D/K | UHF R21-R69<br>VHF R1-R12 |
| Switzerland | VHF 05-12<br>UHF 21-69 | | |
| Italy | VHF 05-12 (D,E,F,G,H,H1,H2)<br>UHF 21-69 | | |
| Spain | UHF 21-69 | | |
| Sweden | VHF 05-12<br>UHF 21-69 | | |
| Finland | VHF 05-12<br>UHF 21-69 | | |
| Greece | VHF 05-12<br>UHF 21-69 | | |

**Video Input** PAL, SECAM, NTSC 3.58/4.43

**External connections**

| | | | |
|---|---|---|---|
| EXT1 | Input/Output | 21-pin SCART | RGB, A/V<br>Selectable output |
| EXT2 | Input/Output | 21-pin SCART | A/V, S-video<br>Selectable output |
| EXT3 | Input | Phono jacks<br>Phono jacks | Y, $P_B/C_B$, $P_R/C_R$<br>A/V |
| EXT3 | Input (Side) | Phono jack<br>Phono jacks | Video<br>Audio L + R |
| HDMI | Input | HDMI (LIP SYNC) | |
| PC | Input | Mini D-sub 15-pin | Analog RGB signal |
| PC/HDMI Audio | | Phono jacks | Audio L + R |
| Fixed Audio Output | | Phono jacks | Audio L + R |

| | | | |
|---|---|---|---|
| **Stereo** | | Nicam<br>2 carrier system | |
| **Visible Screen Size** (approx.) | Model | 26<br>32<br>37<br>42 | 66cm<br>80cm<br>94cm<br>107cm |
| **Display** | | 16:9 | |
| **Sound output** (at 10% distortion) | | Main | 10W + 10W |
| **Power consumption** (approx.) | Model | 26<br>32<br>37<br>42 | 125W<br>162W<br>183W<br>241W |
| **Standby** (approx.) | Model | 26<br>32<br>37<br>42 | <1W<br><1W<br><1W<br><1W |
| **Dimensions** (approx.) | Model | 26<br>32<br>37<br>42 | 52cm (H) 67cm (W) 28cm (D<br>60cm (H) 80cm (W) 29cm (D)<br>67cm (H) 92cm (W) 29cm (D<br>73cm (H) 103cm (W) 34cm (D) |
| | | *(Height dimension includes foot stand)* | |
| **Weight** (approx.) | Model | 26<br>32<br>37<br>42 | 14.5kg<br>18kg<br>22kg<br>27.5kg |
| **Headphone socket** | | 3.5mm stereo jack | |
| **Accessories** | | Remote control<br>2 batteries<br>(AAA, IEC R03 1.5V) | |